

## SEQUENCE LISTING

V> Kerr, William G. Ninos, John M.

- <120> Novel SH2containing Inositol 5'-phosphatase Isoform That Partners With The Grb2 Adapter Protein
- <130> USF-211XT
- <140> 10/605,452
- <141> 2003-09-30
- <150> 60/319,583
- <151> 2002-09-30
- <160> 18
- <170> PatentIn version 3.3
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- <211> 4125
- <212> PRT
- <213> Mus musculus
- <400> 1
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- Cys Ala Thr Cys Cys Cys Thr Gly Gly Ala Gly Thr Cys Thr Cys Thr 65 70 75 80
- Gly Cys Ala Gly Ala Gly Gly Thr Thr Gly Thr Thr Thr Gly Ala Cys 85 90 95
- Cys Ala Ala Cys Ala Gly Cys Thr Cys Thr Cys Cys Cys Cys Ala Gly 100 105 110

Gly Cys Cys Thr Thr Cys Gly Cys Cys Cys Ala Cys Gly Ala Cys Cys Lis 125

Thr Cys Ala Gly Gly Thr Gly Cys Cys Cys Gly Gly Ala Gly Ala Gly

Gly Cys Cys Ala Gly Thr Cys Cys Cys Ala Thr Cys Ala Cys Cys Ala

130

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Cys Thr Gly Thr Cys Thr Thr Cys Cys Ala Thr Thr Gly Ala Ala Gly
195 200 205

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Gly Cys Thr Gly Cys Ala Cys Gly Ala Gly Gly Gly Cys Thr Cys Ala 225 230 235 240

Gly Ala Ala Thr Cys Thr Ala Cys Cys Ala Ala Cys Ala Gly Gly Cys 245 250 255

Gly Thr Thr Cys Cys Cys Thr Thr Ala Thr Cys Cys Cys Thr Cys Cys 260 265 270

Gly Gly Thr Cys Ala Cys Cys Thr Thr Thr Gly Ala Gly Gly Thr Gly  $275 \hspace{1cm} 280 \hspace{1cm} 285 \hspace{1cm}$ 

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Gly Cys Ala Thr Thr Cys Cys Thr Cys Ala Gly Ala Ala Ala Ala Thr  $305^{\circ}$  310 315 320

Gly Cys Ala Thr Cys Thr Cys Ala Ala Ala Gly Thr Gly Gly Ala Cys 325 330 335

Gly Thr Thr Gly Ala Gly Thr Cys Thr Gly Gly Gly Ala Ala Ala Cys 340 345 350

3

Thr Gly Ala Thr Cys Gly Thr Thr Ala Ala Gly Ala Ala Gly Thr Cys 355 360 365

Cys Ala Ala Gly Gly Ala Thr Gly Gly Thr Thr Cys Thr Gly Ala Gly 370 380

Gly Ala Cys Ala Ala Gly Thr Thr Cys Thr Ala Cys Ala Gly Cys Cys 385 390 395 400

Ala Cys Ala Ala Ala Ala Ala Ala Ala Thr Cys Cys Thr Gly Cys Ala 405 410 415

Gly Cys Thr Cys Ala Thr Thr Ala Ala Gly Thr Cys Cys Cys Ala Gly 420 425 430

Ala Ala Gly Thr Thr Cys Thr Ala Ala Ala Cys Ala Ala Gly Thr 435 440 445

Thr Gly Gly Thr Gly Ala Thr Thr Thr Thr Gly Gly Thr Gly Gly Ala 450 455 460

Gly Ala Cys Gly Gly Ala Gly Ala Gly Gly Ala Gly Ala Ala Ala 465 470 475 480

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Ala Thr Gly Thr Thr Thr Thr Gly Cys Thr Gly Ala Cys Thr Cys 500 505 510

Thr Ala Ala Gly Ala Ala Ala Gly Ala Gly Ala Gly Gly Cys 515 520 525

Thr Thr Cys Thr Gly Thr Cys Ala Ala Cys Thr Cys Cys Thr Gly Cys 530 540

Ala Gly Cys Ala Gly Ala Thr Gly Ala Ala Gly Ala Ala Cys Ala Ala 545 550 555 560

Gly Cys Ala Thr Thr Cys Gly Gly Ala Gly Cys Ala Gly Cys Cys Ala 570 575 Gly Ala Gly Cys Cys Thr Gly Ala Cys Ala Thr Gly Ala Thr Cys Ala Cys Cys Ala Thr Cys Thr Thr Cys Ala Thr Thr Gly Gly Cys Ala Cys 600 Thr Thr Gly Gly Ala Ala Cys Ala Thr Gly Gly Gly Thr Ala Ala Thr 615 Gly Cys Ala Cys Cys Cys Cys Cys Thr Cys Cys Cys Ala Ala Gly Ala 630 635 Ala Gly Ala Thr Cys Ala Cys Gly Thr Cys Cys Thr Gly Gly Thr Thr 645 650 Thr Cys Thr Cys Cys Ala Ala Gly Gly Gly Cys Ala Gly 660 Gly Gly Ala Ala Ala Gly Ala Cys Ala Cys Gly Gly Ala Cys Gly 680 Ala Cys Thr Cys Thr Gly Cys Thr Gly Ala Cys Thr Ala Cys Ala Thr 695 690 Cys Cys Cys Cys Cys Ala Thr Gly Ala Cys Ala Thr Cys Thr Ala Thr 710 715 Gly Thr Gly Ala Thr Thr Gly Gly Cys Ala Cys Cys Ala Gly Gly 725 730 Ala Gly Gly Ala Thr Cys Cys Cys Cys Thr Thr Gly Gly Ala Gly Ala

Gly Ala Ala Gly Gly Ala Gly Thr Gly Gly Cys Thr Gly Gly Ala Gly 755 760 765

Cys Thr Ala Cys Thr Cys Ala Gly Gly Cys Ala Cys Thr Cys Cys

Thr Gly Cys Ala Ala Gly Ala Ala Gly Thr Cys Ala Cys Cys Ala Gly Cys Ala Thr Gly Ala Cys Ala Thr Thr Ala Ala Ala Ala Cys Ala Gly Thr Thr Gly Cys Cys Ala Thr Cys Cys Ala Cys Ala Cys Cys Thr Cys Thr Gly Gly Ala Ala Cys Ala Thr Thr Cys Gly Cys Ala Thr Ala Gly Thr Gly Gly Thr Gly Cys Thr Thr Gly Cys Cys Ala Ala Gly Cys Cys Ala Gly Ala Gly Cys Ala Thr Gly Ala Gly Ala Ala Thr Cys Gly Gly Ala Thr Cys Ala Gly Cys Cys Ala Thr Ala Thr Cys Thr Gly Cys Ala Cys Thr Gly Ala Cys Ala Ala Cys Gly Thr Gly Ala Ala Gly Ala Cys Ala Gly Gly Cys Ala Thr Cys Gly Cys Cys Ala Ala Cys Ala Cys Cys Cys Thr Gly Gly Gly Ala Ala Cys Ala Ala Gly Gly Gly Ala Gly Cys Ala Gly Thr Gly Gly Gly Ala Gly Thr Gly Thr Cys Cys Thr Thr Cys Ala Thr Gly Thr Thr Cys Ala Ala Thr Gly Gly Ala Ala Cys Cys Thr Cys Cys Thr Thr Gly Gly Gly Gly Thr Thr Cys Gly Thr 

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- Gly Cys Cys Cys Thr Gly Gly Gly Ala Gly Ala Cys Ala Ala Gly 1070 1075 1080
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- Cys Thr Gly Cys Cys Cys Ala Cys Thr Thr Gly Gly Gly Ala Gly 1160 1165 1170
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- Cys Ala Gly Ala Ala Gly Ala Thr Cys Ala Ala Gly Cys Ala Ala 1190 1195 1200

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Cys	Ala 1205	Gly	Cys	Ala	Gly	Thr 1210		Thr	Thr	Cys	Ala 1215	Gly	Ala	Cys
Cys	Thr 1220	Thr	Cys	Thr		Gly 1225	Cys	Cys	Cys	Ala	Cys 1230	Gly	Ala	Cys
Cys	Ala 1235		Cys	Thr	Gly	Cys 1240		Cys	Cys	Thr	Gly 1245		Ala	Gly
Ala	Gly 1250	Gly	Ala	Ala	Gly	Gly 1255	Ala	Cys	Cys	Ala	Gly 1260	Ala	Ala	Gly
Gly	Thr 1265	Cys	Thr	Thr	Cys	Cys 1270	Thr	Gly	Cys	Ala	Cys 1275	Thr	Thr	Thr
Gly	Ala 1280	Gly	Gly	Ala	Gly	Gly 1285	Ala	Ala	Gly	Ala	Gly 1290	Ala	Thr	Cys
Ala	Cys 1295	Cys	Thr	Thr	Cys	Gly 1300	Cys	Cys	Cys	Cys	Cys 1305	Ala	Cys	Cys
	Ala 1310					1315					1320			
Cys	Thr 1325	Gly	Ala	Cys	Cys	Cys 1330	Gly	Gly	Gly	Ala	Cys 1335	Ala	Ala	Gly
	Ala 1340		_	-		1345					1350			
	Ala 1355					1360	•				1365			
	Thr 1370					1375					1380			
	Cys 1385				_	1390					1395			
Cys	Gly 1400	Ala	Gly	Thr	Cys	Cys 1405	Thr	Cys	Thr	Gly	Gly 1410	Ala	Ala	GTA

Thr Cys Thr Thr Ala Cys Cys Cys Gly Cys Thr Gly Gly Thr Gly 1415 1420 1425

1

Cys Ala Thr Gly Thr Gly Gly Thr Cys Thr Gly Thr Cys Ala Gly 1430 1435 1440

8

Thr Cys Cys Thr Ala Thr Gly Gly Cys Ala Gly Thr Ala Cys Cys 1445 1450 1455

Ala Gly Thr Gly Ala Cys Ala Thr Cys Ala Thr Gly Ala Cys Gly 1460 1465 1470

Ala Gly Thr Gly Ala Cys Cys Ala Cys Ala Gly Cys Cys Cys Thr 1475 1480 1485

Gly Thr Cys Thr Thr Thr Gly Cys Cys Ala Cys Gly Thr Thr Thr 1490 1495 1500

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Thr Cys Thr Cys Ala Ala Thr Thr Cys Gly Thr Cys Thr Cys Cys 1520 1530

Ala Ala Gly Ala Ala Thr Gly Gly Thr Cys Cys Thr Gly Gly Cys 1535 1540 1545

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Gly Gly Cys Ala Gly Ala Thr Cys Gly Ala Gly Thr Thr Thr 1565 1570 1575

Cys Thr Thr Gly Cys Ala Thr Gly Cys Thr Ala Cys Gly Cys Cys 1580 1585 1590

Ala Cys Ala Cys Thr Gly Ala Ala Gly Ala Cys Cys Ala Ala Gly 1595 1600 1605

Thr Cys Cys Cys Ala Gly Ala Cys Thr Ala Ala Gly Thr Thr Cys

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Thr	Cys 1640	Ala	Ala	Gly	Cys	Thr 1645	Gly	Cys	Thr	Thr	Ala 1650	Gly	Ala	Gly
Ala	Gly 1655	Thr	Thr	Thr	Thr	Gly 1660	Thr	Cys	Ala	Ala	Gly 1665	Ala	Gly	Thr
Cys	Ala 1670	Gly	Gly	Ala	Ala	Gly 1675	Gly	Ala	Gly	Ala	Gly 1680	Ala	Ala	Thr
Gly	Ala 1685	Ala	Gly	Ala	Gly	Gly 1690	Gly	Ala	Ala	Gly	Thr 1695	Gly	Ala	Ala
Gly	Gly 1700	Ala	Gly	Ala	Gly	Cys 1705	Thr	Gly	Gly	Thr	Gly 1710	Gly	Thr	Ala
Cys	Gly 1715	Gly	Thr	Thr	Thr	Gly 1720	Gly	Ala	Gly	Ala	Gly 1725	Ala	Cys	Thr
Cys	Thr 1730	Thr	Cys	Cys	Cys	Ala 1735	Ala	Gly	Cys	Thr	Ala 1740	Ala	Ala	Gly
Cys	Cys 1745	Cys	Ala	Thr	Thr	Ala 1750	Thr	Cys	Thr	Cys	Thr 1755	Gly	Ala	Cys
Cys	Cys 1760	Cys	Gly	Ala	Gly	Thr 1765	Ala	Cys	Thr	Thr	Ala 1770	Cys	Thr	Gly
Gly	Ala 1775	Cys	Cys	Ala	Gly	Cys 1780	Ala	Thr	Ala	Thr	Cys 1785	Cys	Thr	Gly
Ala	Thr 1790	_	Ala	Gly	Cys	Ala 1795	Thr	Thr	Ala	Ala	Ala 1800	Thr	Cys	Cys
Thr	Cys 1805	Thr	Gly	Ala	Cys	Ala 1810	Gly	Thr	Gly	Ala	Cys 1815	Gly	Ala	Gly

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Thr Cys Cys Thr Ala Thr Gly Gly Thr Gly Ala Ala Gly Gly Cys 1820 1825 1830

Thr Gly Cys Ala Thr Thr Gly Cys Cys Cys Thr Thr Cys Gly Cys 1835 1840 1845

Thr Thr Gly Gly Ala Gly Ala Cys Cys Ala Cys Ala Gly Ala Gly 1850 1860

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Cys Ala Cys Cys Ala Thr Gly Gly Gly Gly Ala Gly Ala Thr Gly 1895 1900 1905

Ala Cys Thr Gly Gly Cys Cys Ala Cys Thr Thr Cys Ala Gly Gly 1910 1915 1920

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Cys Ala Gly Ala Cys Cys Thr Cys Cys Cys Ala Gly Gly Cys 1940 1945 1950

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Ala Ala Ala Thr Gly Cys Thr Thr Gly Ala Ala Gly Ala Ala Cys 2015 2020 2025

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Gly	Ala 2060	-	Cys	Cys	Thr	Thr 2065	_	Thr	Gly	Gly	Cys 2070	Ala	Gly	Gly
Gly	Thr 2075	Cys	Cys	Cys	Thr	Gly 2080	Cys	Ala	Thr	Gly	Thr 2085	Gly	Gly	Thr
Gly	Thr 2090	Cys	Thr	Cys	Cys	Ala 2095	Gly	Cys	Cys	Thr	Cys 2100	Ala	Ala	Thr
Gly	Ala 2105	Gly	Ala	Thr	Gly	Ala 2110	Thr	Cys	Ala	Ala	Thr 2115	Cys	Cys	Ala
Ala	Ala 2120	-	Thr	Ala	_	Ala 2125		Thr	Gly		Thr 2130	Ala	Thr	Gly
Gly	Gly 2135	Gly	Cys	Cys	Thr	Thr 2140	Thr	Thr	Gly	Gly	Ala 2145	Cys	Ala	Gly
Cys	Cys 2150	Cys	Cys	Thr	Gly	Cys 2155	Ala	Thr	Gly	Gly	Gly 2160	Ala	Ala	Ala
Thr	Cys 2165	Ala	Ala <sup>:</sup>	Cys	Cys	Cys 2170	Thr	Gly	Thr	Cys	Cys 2175	Cys	Cys	Ala
Gly	Ala 2180	Thr	Cys	Ala	Gly	Cys 2185	Ala	Ala	Cys	Thr	Cys 2190	Ala	Cys	Ala
Gly	Cys 2195	Thr	Thr	Gly	Gly	Ala 2200	Gly	Thr	Thr	Ala	Thr 2205	Gly	Ala	Cys
Cys	Ala 2210	Gly	Cys	Thr	Ala	Cys 2215	Cys	Cys	Ala	Ala	Ala 2220	Gly	Ala	Cys
Thr	Cys 2225	Cys	Thr	Cys	Cys	Cys 2230	Thr	Gly	Gly	Gly	Gly 2235	Cys	Cys	Thr

Gly	Gly 2240		Ala	Gly	Gly	Gly 2245		Gly	Gly	Ala	Gly 2250	Gly	Gly	Thr
Cys	Cys 2255		Cys	Cys	Ala	Ala 2260	_	Cys	Cys	Cys	Thr 2265	Cys	Cys	Cys
Thr	Cys 2270	_	Cys	Ala	Ala	Cys 2275	_	Ala	Cys	Cys	Thr 2280	Cys	Thr	Gly
Thr	Cys 2285		Cys	Cys	Ala	Ala 2290	Ala	Gly	Ala	Ala	Gly 2295	Thr	Thr	Thr
Thr	Cys 2300		Thr	Cys	Thr	Thr 2305	Cys	Cys	Ala	Cys	Ala 2310	Gly	Cys	Cys
Ala	Ala 2315	Cys	Cys	Gly	Ala	Gly 2320	Gly	Thr	Cys	Cys	Cys 2325	Thr	Gly	Cys
Cys	Cys 2330	Cys	Ala	Gly	Gly	Gly 2335	Thr	Gly	Cys	Ala	Ala 2340	Gly	Ala	Gly
Gly	Cys 2345	Ala	Ala	Gly	Ala	Cys 2350	Cys	Thr	Gly	_	Gly 2355	Gly	Ala	Thr
Cys	Thr 2360	Gly	Gly	Gly	Ala	Ala 2365	Ala	Gly	Gly	Thr	Gly 2370	Gly	Ala	Ala
Gly	Cys 2375	Thr	Cys	Thr	Gly	Cys 2380	Thr	Cys	Cys	Ala	Gly 2385	Gly	Ala	Gly
Gly	Ala 2390	Cys	Cys	Thr	Gly	Cys 2395	Thr	Gly	Cys	Thr	Gly 2400	Ala	Cys	Gly
Ala	Ala 2405	Gly	Cys	Cys	Cys	Gly 2410	Ala	Gly	Ala	Thr	Gly 2415	Thr	Thr	Thr
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Cys	Cys 2465	Cys	Ala	Gly	Gly	Ala 2470	Ala	Ala	Gly	Ala	Gly 2475	Cys	Ala	Gly
Gly	Ala 2480	Gly	Thr	Cys	Thr	Cys 2485	Cys	Cys	Ala	Ala	Gly 2490	Ala	Thr	Gly
Cys	Thr 2495	Gly	Cys	Gly	Gly	Ala 2500	Ala	Gly	Gly	Ala	Gly 2505	Cys	Cys	Cys
Cys	Cys 2510	Gly	Cys	Cys	Cys	Thr 2515	Gly	Thr	Cys	Cys	Ala 2520	Gly	Ala	Cys
Cys	Cys 2525	Ala <sup>.</sup>	Gly	Gly	Ala	Ala 2530	Thr	Cys	Thr	Cys	Ala 2535	Thr	Cys	Ala
Cys	Cys 2540	Cys	Ala	Gly	Cys	Ala 2545	Thr	Cys	Gly	Thr	Gly . 2550	Cys	Thr	Cys
Cys	Cys 2555	Cys	Ala	Ala	Ala	Gly 2560	Cys	Cys	Cys	Ala	Ala 2565	Gly	Ala	Gly
Gly	Thr 2570	Gly	Gly	Ala	Gly	Ala 2575	Gly	Thr	Gly	Thr	Cys 2580	Ala	Ala	Gly
Gly	Gly 2585	Gly	Ala	Cys	Ala	Ala 2590	Gly	Cys	Ala	Ala	Ala 2595	Cys	Ala	Gly
Gly	Cys 2600	Cys	Cys	Cys	Thr	Gly 2605	Thr	Gly	Cys	Cys	Thr 2610	Gly	Thr	Cys
Cys	Thr 2615	Thr	Gly	Gly	Cys	Cys 2620	Cys	Cys	Ala	Cys	Ala 2625	Cys	Cys	Cys
Cys	Gly 2630	Gly	Ala	Thr	Cys	Cys 2635	Gly	Cys	Thr	Cys	Cys 2640	Thr	Thr	Thr

Ala Cys Cys Thr Gly Thr Thr Cys Thr Thr Cys Thr Thr Cys Thr 2645 2650 2655

14

Gly Cys Thr Gly Ala Gly Gly Cys Ala Gly Ala Ala Thr Gly 2660 2665 2670

Ala Cys Cys Ala Gly Thr Gly Gly Gly Gly Ala Cys Ala Ala Gly 2675 2680 2685

Ala Gly Cys Cys Ala Ala Gly Gly Gly Ala Ala Gly Cys Cys Cys 2690 2695 2700

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Gly Thr Cys Ala Ala Gly Cys Cys Thr Thr Cys Cys Ala Gly Gly 2750 2760

Thr Cys Ala Gly Ala Ala Ala Thr Gly Ala Gly Cys Cys Ala Gly 2765 2770 2775

Cys Ala Gly Ala Cys Ala Ala Cys Ala Cys Cys Cys Ala Thr Cys 2780 2785 2790

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Cys Cys Cys Cys Thr Gly Cys Cys Ala Gly Thr Cys Ala Ala Gly 2810 2815 2820

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- Cys Thr Cys Cys Cys Cys Cys Ala Cys Cys Ala Thr Gly Gly Cys 2885 2890 2895
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- Gly Ala Thr Gly Cys Cys Thr Cys Thr Cys Thr Cys Ala Gly Gly 3005 3010 3015
- Ala Thr Gly Cys Cys Thr Cys Thr Thr Gly Gly Ala Gly Gly Ala 3020 3025 3030
- Cys Cys Thr Cys Cys Thr Gly Cys Thr Ala Gly Cys Thr Cys Thr 3035 3040 3045
- Thr Cys Thr Thr Gly Cys Cys Thr Ala Gly Cys Thr Thr Cys Ala 3050 3055 3060

Ala	Gly 3065	Thr	Cys	Cys	Cys	Ala 3070		Gly	Cys	Thr	Gly 3075	Thr	Gly	Thr
Ala	Thr 3080	Thr	Thr	Thr	Thr	Thr 3085	Thr	Thr	Cys	Ala	Gly 3090	Gly	Ala	Ala
Ala	Cys 3095	Gly	Gly	Cys	Cys	Thr 3100	Cys	Ala	Cys	Thr	Thr 3105	Cys	Thr	Cys
Thr	Gly 3110		Gly	Gly	Thr	Cys 3115	_	Ala	Ala	Gly	Ala 3120	Ala	Gly	Thr
Gly	Thr 3125	Gly	Cys	Thr	Gly	Cys 3130	Thr	Gly	Gly	Cys	Thr 3135	Gly	Cys	Cys
Ala	Cys 3140	Ala	Cys	Thr	Gly	Thr 3145	Gly	Cys	Gly	Gly	Cys 3150	Ala	Gly	Ala
Thr	Gly 3155	Cys	Thr	Ala	Ala	Ala 3160	Gly	Cys	Thr	Gly	Gly 3165	Ala	Thr	Gly
Ala	Cys 3170	Ala	Ala	Ala	Cys	Gly 3175	Cys		Cys	Gly	Cys 3180	Cys	Ala	Thr
Ala	Cys 3185	Ala	Gly	Ala	Cys	Ala 3190	Gly	Cys	Ala	Gly	Ala 3195	Cys	Ala	Gly
Cys	Gly 3200	Gly	Cys	Ala	Cys	Thr 3205	Gly	Gly	Gly	Thr	Cys 3210	Thr	Cys	Ala
Gly	Ala 3215	Ala	Cys	Ţhr	Thr	Gly 3220	Gly	Ala	Thr	Thr	Cys 3225	Cys	Thr	Gly
Gly	Gly 3230	Cys	Cys	Thr	Thr	Cys 3235	Thr	Thr	Cys	Cys	Ala 3240	Gly	Thr	Cys
Gly	Cys 3245	Cys	Gly	Thr	Thr	Thr 3250	Thr	Ala	Ala	Ala	Gly 3255	Ala	Ala	Ala
Gly	Gly	Ala	Ala	Cys	Thr	Ala	Ala	Cys	Gly	Gly	Ala	Gly	Cys	Thr

	3260					3263								
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Al	a Ala 3290	_	Ala	Thr	Ala	Thr 3295		Ala	Ala	Thr	Ala 3300		Thr	Ala
Al	a Thr 3305		Thr	Thr	Ala	Thr 3310	Thr	Ala	Ala	Thr	Ala 3315	Ala	Thr	Ala
Al	a Thr 3320		Ala	Cys	Ala	Gly 3325	Thr	Cys	Ala	Gly	Gly 3330	Thr	Gly	Cys
Су	s Ala 3335		Gly	Thr	Gly	Cys 3340	Thr	Gly	Thr	Gly	Thr 3345	Thr	Ala	Ala
G1	y Thr 3350	_	Cys	Thr	Thr	Thr 3355	Ala	Thr	Gly	Ala	Ala 3360	Cys	Ala	Thr
Th	r Thr 3365		Thr	Cys	Gly	Gly 3370		Cys	Thr	Gly	Gly 3375	Cys	Cys	Thr
Су	s Cys 3380		Gly	Thr	Gly	Cys 3385	Thr	Gly	Ala	Gly	Gly 3390	Thr	Gly	Cys
_	s Ala 3395			-		3400	-	-		-	3405		-	-
Су	s Thr 3410	Ala	Thr	Gly	Cys	Cys 3415	Cys	Ala	Gly	Gly	Cys 3420	Cys	Cys	Ala
	s Thr 3425				_	3430	_				3435			
	y Gly 3440			_	-	3445					3450			
Th	r Thr 3455	Thr	Ala	Ala	Ala	Ala 3460	Ala	Gly	Cys	Ala	Thr 3465	Thr	Ala	Ala

Ala	Gly 3470		Ala	Ala	Ala	Cys 3475		Ala	Thr	Cys	Gly 3480	_	Thr	Cys
Thr	Cys 3485	Thr	Thr	Ala	Gly	Ala 3490		Cys	Thr	Ala	Ala 3495	Cys	Cys	Gly
Gly	Cys 3500	_	Gly.	Gly	Gly	Cys 3505		Cys	Thr	Ala	Cys 3510	Thr	Gly	Cys
Ala	Gly 3515	Gly	Gly	Ala	Cys	Cys 3520	Cys	Gly	Ala	Ala	Cys 3525	Ala	Gly	Thr
Cys	Thr 3530	Gly	Cys	Ala	Thr	Gly 3535	Gly	Cys	Thr	Ala	Ala 3540	Gly	Thr	Gly
Gly	Cys 3545	Ala	Cys	Ala	Ala	Gly 3550	Gly	Ala	Gly	Cys	Cys 3555	Thr	Gly	Gly
Cys	Cys 3560	Cys	Thr	Gly	Thr	Cys 3565	Cys	Ala	Gly	Cys	Thr 3570	Thr	Cys	Ala
Gly	Ala 3575	Gly	Ala	Thr	Cys	Cys 3580	Ala	Ala	Gly	Cys	Thr 3585	Gly	Cys	Thr
Thr	Thr 3590	Thr	Thr	Gly	Cys	Thr 3595	Gly	Gly	Gly	Gly	Thr 3600	Thr	Cys	Thr
Gly	Thr 3605	Cys	Ala	Cys	Ala	Gly 3610	Gly	Cys	Cys	Thr	Gly 3615	Ala	Thr	Cys
Cys	Thr 3620	Cys	Thr	Thr	Gly	Gly 3625	Thr	Thr	Thr		Thr 3630	Ala	Thr	Gly
Gly	Gly 3635	Gly	Thr	Thr.	Thr	Cys 3640	Ala	Ala	Gly	Thr	Cys 3645	Thr	Gly	Cys
Cys	Ala 3650	Gly	Ala	Gly	Thr	Cys 3655	Ala	Gly	Ala	Ala	Ala 3660	Thr	Cys	Ala
Gly	Cys 3665	Thr	Cys	Thr	Ala	Ala 3670	Cys	Thr	Cys	Gly	Cys 3675	Cys	Ala	Gly

Thr Gly Ala Ala Gly Ala Gly Ala Thr Cys Thr Gly Gly Cys Cys 3680 3685 3690

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Δla	Thr	Cve	Δla	Gl v	Gl v	Gly	בומ	בומ	Glv	Glv	Thr	Glv	Δla	Glv	
AIG	3890	Cys	AIA	GLY	Gry	3895	AIG	ALG	Gly	O <sub>1</sub> y	3900	Cly	7114		
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Gly	Thr 4010	Cys	Thr	Thr	Gly	Cys 4015	Thr	Thr	Thr	Thr	Thr 4020	Gly	Ala	Thr	
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Thr	Ala 4040	Gly	Gly	Ala	Ala	Ala 4045	Cys	Cys	Ala	Gly	Ala 4050	Cys	Cys	Thr	
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Gly Thr Cys Ala Thr Cys Ala Gly Gly Ala Cys Thr Cys Thr Gly Cys 50 60

Cys Ala Thr Cys Cys Cys Thr Gly Gly Ala Gly Thr Cys Thr Cys Thr 65 70 75 80

Gly Cys Ala Gly Ala Gly Gly Thr Thr Gly Thr Thr Thr Gly Ala Cys
85 90 95

Cys Ala Ala Cys Ala Gly Cys Thr Cys Thr Cys Cys Cys Cys Ala Gly
100 105 110

Gly Cys Cys Thr Thr Cys Gly Cys Cys Cys Ala Cys Gly Ala Cys Cys 115 120 125

Thr Cys Ala Gly Gly Thr Gly Cys Cys Cys Gly Gly Ala Gly Ala Gly 130 135 140

Gly Cys Cys Ala Gly Thr Cys Cys Cys Ala Thr Cys Ala Cys Cys Ala

Thr Gly Gly Thr Thr Gly Cys Cys Ala Ala Ala Cys Thr Cys Ala Gly Cys Cys Ala Ala Thr Thr Gly Ala Cys Ala Ala Gly Thr Cys Thr Gly Cys Thr Gly Thr Cys Thr Thr Cys Cys Ala Thr Thr Gly Ala Ala Gly Ala Thr Ala Ala Gly Gly Thr Cys Ala Ala Gly Thr Cys Cys Thr Thr Gly Cys Thr Gly Cys Ala Cys Gly Ala Gly Gly Cys Thr Cys Ala Gly Ala Ala Thr Cys Thr Ala Cys Cys Ala Ala Cys Ala Gly Gly Cys Gly Thr Thr Cys Cys Cys Thr Thr Ala Thr Cys Cys Cys Thr Cys Cys Gly Gly Thr Cys Ala Cys Cys Thr Thr Gly Ala Gly Gly Thr Gly Ala Ala Gly Thr Cys Ala Gly Ala Gly Thr Cys Cys Thr Gly Gly Gly Cys Ala Thr Thr Cys Cys Thr Cys Ala Gly Ala Ala Ala Ala Thr Gly Cys Ala Thr Cys Thr Cys Ala Ala Ala Gly Thr Gly Gly Ala Cys Gly Thr Thr Gly Ala Gly Thr Cys Thr Gly Gly Gly Ala Ala Ala Cys Thr Gly Ala Thr Cys Gly Thr Thr Ala Ala Gly Ala Ala Gly Thr Cys

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- Thr Thr Gly Gly Ala Ala Cys Ala Thr Gly Gly Gly Thr Ala Ala Thr 610  $\,$  615  $\,$  620
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Ala Gly Cys Ala Gly Thr Gly Gly Gly Ala Gly Thr Gly Thr Cys Cys 945 955 960

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Cys Cys Thr Cys Cys Thr Thr Gly Gly Gly Gly Thr Thr Cys Gly Thr 980 985 990

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Gly	Cys 1175		Gly	Ala		Gly 1180		Cys	Ala		Cys 1185	Ala	Thr	Cys
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1225

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1850	1855	•	1860

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Ala	Gly 2150	Gly	Gly	Thr	Gly	Cys 2155	Ala	Ala	Gly	Ala	Gly 2160	Gly	Cys	Ala
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Cys	Thr 2210	Gly	Cys	Thr	Gly	Cys 2215	Thr	Gly	Ala	Cys	Gly 2220	Ala	Ala	Gly
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Ala	Cys 2750	Thr	Gly	Cys	Cys	Ala 2755		Gly	Cys	Ala	Gly 2760	Thr	Gly	Ala
Gly	Cys 2765	Thr	Gly	Cys	Thr	Gly 2770	Gly	Thr	Gly	Ala	Thr 2775	Cys	Gly	Gly
Ala	Gly 2780	Cys	Cys	Thr	Gly	Gly 2785	Ala	Gly	Gly	Ala	Ala 2790	Cys	Ala	Gly
Cys	Ala 2795	Cys	Ala	Ala	Ala	Gly 2800	Cys	Ala	Gly	Ala	Cys 2805	Cys	Thr	Gly
Cys	Gly 2810	Cys	Cys	Thr	Cys	Thr 2815	Cys	Thr	Cys	Ala	Gly 2820	Gly	Ala	Thr
Gly	Cys 2825	Cys	Thr	Cys	Thr	Cys 2830	Thr	Cys	Ala	Gly	Gly 2835	Ala	Thr	Gly
Cys	Cys 2840	Thr	Cys	Thr	Thr	Gly 2845	Gly	Ala	Gly	Gly	Ala 2850	Cys	Cys	Thr
Cys	Cys 2855	Thr	Gly	Cys	Thr	Ala 2860	Gly	Cys	Thr	Cys	Thr 2865	Thr	Cys	Thr
Thr	Gly 2870	Cys	Cys	Thr	Ala	Gly 2875	Cys	Thr	Thr	Cys	Ala 2880	Ala	Gly	Thr

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Thr	Ala 2975	Ala	Ala	Gly	Cys	Thr 2980	Gly	Gly	Ala	Thr	Gly 2985	Ala	Cys	Ala
Ala	Ala 2990	Cys	Gly	Cys	Ala	Cys 2995	Gly	Cys	Cys	Ala	Thr 3000	Ala	Cys	Ala
Gly	Ala 3005	Cys	Ala	Gly	Cys	Ala 3010	Gly	Ala	Cys	Ala	Gly 3015	Cys	Gly	Gly
Cys	Ala 3020	Cys	Thr	Gly	Gly	Gly 3025	Thr	Cys	Thr	Cys	Ala 3030	Gly	Ala	Ala
Cys	Thr 3035	Thr	Gly	Gly	Ala	Thr 3040	Thr	Cys	Cys	Thr	Gly 3045	Gly	Gly	Cys
Cys	Thr 3050	Thr	Cys	Thr	Thr	Cys 3055	Cys	Ala	Gly	Thr	Cys 3060	Gly	Cys	Cys
Gly	Thr 3065	Thr	Thr	Thr	Ala	Ala 3070	Ala	Gly	Ala	Ala	Ala 3075	Gly	Gly	Ala
Ala	Cys 3080	Thr	Ala	Ala	Cys	Gly 3085	Gly	Ala	Gly	Cys	Thr	Gly	Cys	Thr

Cys Ala	Thr	Cys	Cys	Gly	Ala	Gly	Gly	Gly	Thr	Gly	Ala	Ala	Gly
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- Thr Gly Cys Cys Cys Ala Gly Gly Cys Cys Cys Ala Cys Thr Ala 3230 3235 3240
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Cys	Ala 3575	Cys	Thr	Gly	Gly	Ala 3580	Gly	Gly	Thr	Gly	Gly 3585	Gly	Cys	Ala
Gly	Cys 3590	Thr	Ala	Thr	Cys	Ala 3595	Cys	Cys	Ala	Thr	Ala 3600	Cys	Cys	Cys
Thr	Gly 3605		Gly	Thr	Thr	Gly 3610	Gly	Gly	Cys	Cys	Ala 3615	Ala	Gly	Cys
Cys	Cys 3620		Cys	Cys	Cys	Cys 3625	Ala	Cys	Cys	Cys	Cys 3630	Thr	Ala	Cys
Cys	Cys 3635		Gly	Cys	Ala	Ala 3640	_	Ala	Thr	Thr	Thr 3645	Cys	Thr	Gly
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Gly	Thr 3665	Cys	Thr	Cys	Cys	Ala 3670	Cys	Cys	Ala	Thr	Ala 3675	Gly	Thr	Cys
Cys	Cys 3680	Cys	Ala	Ala	Gly	Gly 3685	Gly	Cys	Thr	Gly	Ala 3690	Gly	Thr	Thr
Cys	Thr 3695	Cys	Cys	Ala	Gly	Cys 3700	Cys	Thr	Gly	Cys	Thr 3705	Ala	Thr	Cys

Ala Gly Gly Gly Ala Ala Gly Gly Thr Gly Ala Gly Cys Ala Thr 3710 3715 3720

•

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- Ala Thr Ala Thr Cys Thr Thr Thr Cys Thr Thr Gly Thr Cys 3815 3820 3825
- Thr Thr Gly Cys Thr Thr Thr Thr Gly Ala Thr Ala Thr Ala 3830 3835 3840
- Thr Cys Ala Gly Gly Ala Thr Thr Ala Ala Thr Gly Thr Ala Gly 3845 3850 3855
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40 USF-211XT

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<211> 4147

<212> PRT

<213> Homo sapiens

<400> 3

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Cys Thr Gly Cys Cys Cys Cys Cys Ala Gly Ala Gly Ala Gly Thr 35 40 45

Cys Ala Thr Cys Cys Gly Gly Ala Cys Cys Cys Thr Cys Cys Cys Ala 50 55 60

Thr Cys Cys Cys Thr Gly Gly Ala Gly Thr Cys Thr Cys Thr Gly Cys 65 70 75 80

Ala Gly Ala Gly Gly Thr Thr Ala Thr Thr Thr Gly Ala Cys Cys Ala 85 90 95

Gly Cys Ala Gly Cys Thr Cys Thr Cys Cys Cys Cys Gly Gly Cys  $100\ \cdot \ 105$ 

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Ala Gly Gly Thr Thr Cys Cys Thr Gly Gly Thr Gly Ala Gly Gly Cys 130 135 140

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Thr Gly Gly Ala Ala Cys Ala Thr Cys Cys Gly Cys Ala Thr Cys Gly 835 840 845

Thr Gly Gly Thr Gly Cys Thr Gly Gly Cys Cys Ala Ala Gly Cys Cys 850 860

Thr Gly Ala Gly Cys Ala Cys Gly Ala Gly Ala Ala Cys Cys Gly Gly 865 870 875 880

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Cys	Ala 1880	Cys	Gly	Cys	Cys	Thr 1885		Thr	Cys	Ala	Cys 1890	Cys	Cys	Ala
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Ala	Gly 1910	Gly	Cys	Cys	Ala	Cys 1915	Thr	Thr	Cys	Cys	Ala 1920	Gly	Gly	Gly
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Cys Thr Cys Cys Ala Gly Cys Ala Thr Cys Ala Cys Thr Gly Ala 2090 2095 2100

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Cys	Gly 2420		Gly	Ala	Thr	Gly 2425	Thr	Thr	Thr	Gly	Ala 2430	Gly	Ala	Ala
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Cys	Cys 2720	-	Gly	Gly	Thr	Gly 2725	·Cys	Cys	Gly	Gly	Cys 2730	Cys	Ala	Ala
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USF-211XT

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Cys Ala Gly Cys Cys Thr Gly Gly Cys Thr Gly Cys Cys Ala Gly 3875 3880 3885

Gly Gly Ala Gly Gly Gly Thr Gly Gly Gly Cys Cys Thr Cys Thr 3890 3895 3900

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60 USF-211XT

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61

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62 USF-211XT

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USF-211XT

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Thr	Thr 770	Thr	Thr	Asn	Thr	Asn 775	Cys	Cys	Asn	Cys	Thr 780	Asn	Asn	Thr	Gly
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Thr	Cys 1775	Ala	Thr	Ala	Ala	Gly 1780	Ala	Ala	Gly	Cys	Thr 1785	Gly	Thr	Thr
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Ala	Cys 1805	Ala	Gly	Gly	Thr	Cys 1810	Cys	Thr	Gly	Ala	Cys 1815	Cys	Thr	Gly
Thr	Gly 1820	Cys	Thr	Gly	Thr	Gly 1825	Thr	Cys	Cys	Thr	Thr 1830	Gly	Cys	Thr
Ala	Ala 1835	Gly	Cys	Thr	Thr	Thr 1840	Gly	Thr	Cys	Ala	Gly 1845	Ala	Cys	Cys
Cys	Thr 1850	Thr	Cys	Cys	Ala	Cys 1855	Ala	Gly	Cys	Thr	Cys 1860	Cys	Cys	Cys

- Cys Cys Ala Ala Cys Ala Ala Cys Gly Ala Gly Thr Thr Cys Cys 1865 1870 1875
- Cys Cys Ala Gly Thr Ala Cys Cys Thr Gly Cys Cys Thr Cys Ala 1880 1885 1890
- Cys Cys Thr Cys Ala Thr Cys Ala Cys Thr Ala Thr Gly Gly Thr 1895 1900 1905
- Gly Ala Cys Ala Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Ala 1910 1915 1920
- Thr Gly Cys Gly Cys Thr Gly Ala Cys Thr Cys Thr Cys Thr Gly 1925  $1930 \hspace{1.5cm} 1935$
- Gly Cys Ala Cys Ala Thr Thr Ala Thr Gly Gly Cys Ala Gly Thr 1940 1945 1950
- Gly Thr Thr Ala Ala Ala Ala Gly Cys Thr Thr Cys Cys Ala Thr 1955 1960 1965
- Cys Thr Cys Thr Cys Thr Cys Thr Thr Thr Gly Cys Thr Gly Ala 1970 1975 1980
- Ala Thr Ala Ala Thr Gly Ala Ala Cys Cys Thr Cys Ala Gly Gly 1985 1990 1995
- Thr Thr Gly Thr Thr Cys Ala Ala Gly Ala Gly Ala Cys Cys Gly 2000 2005 2010
- Gly Ala Ala Thr Gly Thr Thr Cys Thr Thr Cys Ala Cys Cys Thr 2015 2020 2025
- Gly Cys Cys Thr Gly Cys Ala Cys Ala Cys Ala Thr Cys Thr Cys 2030 2035 2040
- Thr Thr Cys Ala Cys Thr Thr Thr Cys Thr Thr Thr Thr Ala Thr 2045 2050 2055
- Ala Gly Ala Thr Cys Ala Gly Gly Thr Ala Gly Gly Gly Ala Cys 2060 2065 2070

Thr	Gly 2075		Gly	Cys	Gly	Thr 2080	Gly	Thr	Ala	Gly	Ala 2085		Gly	Gly
Ala	Ala 2090	-	Ala	Ala		Cys 2095	Thr	Gly	Thr	Thr	Thr 2100	Thr	Cys	Cys
Gly	Thr 2105		Cys	Cys	Cys	Cys 2110		Gly	Cys	Cys	Ala 2115		Cys	Thr
Cys	Thr 2120	Gly	Cys	Ala	Gly	Gly 2125	Thr	Gly	Cys	Ala	Cys 2130	Thr	Cys	Cys
Ala	Cys 2135	Ala	Thr	Ala	Ala	Ala 2140	Thr	Cys	Ala	Ala	Gly 2145	Thr	Gly	Thr
Thr	Ala 2150	Ala	Ala	Ala	Gly	Thr 2155	Gly	Cys	Thr	Thr	Thr 2160	Gly	Ala	Thr
Thr	Ala 2165	Ala	Ala	Cys	Ala	Gly 2170	Gly	Ala	Cys	Ala	Gly 2175	Gly	Cys	Gly
Cys	Gly 2180	Thr	Thr	Cys	Thr	Thr 2185	Gly	Ala	Gly	Thr	Thr 2190	Cys	Ala	Thr
Cys	Thr 2195	Gly	Thr	Thr	Cys	Ala 2200	Cys	Ala	Thr	Ala	Cys 2205	Thr	Gly	Thr
Cys	Thr 2210	Gly	Gly	Cys	Ala	Ala 2215	Gly	Cys	Gly	Cys	Thr 2220	Gly	Ala	Cys
Thr	Gly 2225	Ala	Gly	Gly	Gly	Thr 2230	Cys	Thr	Cys	Cys	Thr 2235	Cys	Thr	Gly
Thr	Ala 2240	Cys	Cys	Cys	Thr	Gly 2245	Thr	Thr	Cys	Thr	Gly 2250	Ala	Gly	Ala
	Cys 2255	Thr	Ala	Ala	Cys	Ala 2260	Ala	Ala	Ala	Gly	Ala 2265	Cys	Gly	Ala

Ala Thr Cys Ala Ala Cys Ala Thr Ala Cys Ala Gly Ala Ala Ala

- Ala Cys Thr Gly Thr Thr Ala Thr Thr Thr Ala Gly Thr Gly Ala 2285 2290 2295
- Cys Thr Gly Ala Thr Thr Ala Ala Cys Thr Ala Ala Cys Gly 2300 2305 2310
- Ala Ala Gly Gly Cys Ala Thr Gly Gly Gly Cys Thr Gly Gly Ala 2315 2320 2325
- Gly Ala Ala Thr Ala Ala Cys Thr Cys Ala Gly Cys Ala Gly 2330 2335 2340
- Thr Thr Ala Ala Gly Ala Ala Cys Ala Thr Thr Thr Gly Cys Thr 2345 2350 2355
- Gly Ala Thr Cys Thr Thr Gly Cys Ala Gly Ala Gly Gly Ala Cys 2360 2365 2370
- Cys Thr Gly Gly Gly Thr Thr Gly Gly Gly Thr Thr Cys Cys Thr 2375 2380 2385
- Ala Gly Cys Ala Cys Ala Cys Ala Cys Ala Gly Gly Gly Ala Cys 2390 2395 2400
- Ala Gly Thr Thr Cys Cys Ala Gly Thr Cys Cys Cys Gly Gly Thr 2405 2410 2415
- Gly Thr Gly Thr Cys Cys Thr Thr Thr Thr Cys Thr Cys Ala Cys 2420 2425 2430
- Thr Thr Cys Thr Gly Thr Gly Gly Ala Cys Ala Cys Ala Ala Gly 2435 2440 2445
- Thr Thr Thr Ala Cys Ala Cys Ala Thr Ala Gly Thr Gly Cys 2450 2455 2460
- Ala Cys Ala Cys Ala Cys Ala Thr Ala Cys Ala Cys Thr Cys Ala 2465 2470 2475
  - Cys Ala Thr Ala Thr Ala Ala Ala Ala Cys Ala Gly Ala

	2.00					2100		•			2170			
Ala	Cys 2495		Thr	Thr	Thr	Ala 2500		Ala	Ala	Gly	Thr 2505		Thr	Gly
Thr	Thr 2510	Thr	Ala	Ala	Ala	Thr 2515	Ala	Ala	Cys	Gly	Gly 2520	Ala	Äla	Thr
Cys	Ala 2525		Thr	Thr		Thr 2530		Thr	Ala	Gly	Gly 2535	Thr	Thr	Thr
Thr	Cys 2540		Thr	Thr	Thr	Ala 2545		Ala	Thr	Ala	Gly 2550	Gly	Thr	Ala
Ala	Ala 2555		Ala	Gly		Cys 2560		Ala	Ala	Ala	Ala 2565		Cys	Thr
Gly	Cys 2570		Thr	Thr	Thr	Thr 2575	Ala	Thr	Thr	Gly	Thr 2580	Thr	Thr	Cys
Thr	Ala 2585	Ala	Gly	Thr	Thr	Thr 2590	Thr	Ala	Ala	Thr	Thr 2595	Thr	Ala	Thr
Thr	Thr 2600	Thr	Thr	Cys	Thr	Cys 2605	Thr	Gly	Thr	Gly	Thr 2610	Gly	Thr	Ala
Cys	Ala 2615	Thr	Ala	Cys	Gly	Cys 2620	Ala	Thr	Gly		Cys 2625	Thr	Cys	Cys
Thr	Thr 2630	Ala	Thr	Cys	Thr	Gly 2635	Thr	Ala	Thr	Gly	Thr 2640	Gly	Cys	Gly
Thr	Gly 2645	Cys	Ala	Cys	Thr	Gly 2650	Thr	Gly	Thr	Gly	Cys 2655	Ala	Thr	Gly
Cys	Ala 2660	Thr	Gly	Ala	Ala	Cys 2665	Cys	Cys	Ala	Cys	Ala 2670	Gly	Ala	Gly
Ala	Cys 2675	Cys	Ala	Gly	Ala	Ala 2680	Gly	Ala	Gly	Thr	Ala 2685	Cys	Cys	Ala

Cys		Gly	Ala	Thr	Thr	Cys	Thr	Cys	Thr	Gly	Gly	Ala	Gly	Cys
	2690					2695					2700			

Thr Gly Gly Ala Gly Thr Gly Ala Thr Thr Gly Ala Thr Ala Gly 2705 2710 2715

Gly Cys Thr Gly Thr Thr Gly Gly Gly Ala Gly Cys Cys Ala Cys 2720 2725 2730

Thr Cys Cys Ala Cys Ala Thr Gly Gly Gly Gly Ala Thr Thr Cys 2735 2740 2745

Ala Gly Ala Gly Thr Thr Gly Ala Ala Cys Thr Thr Cys Gly Thr 2750 2755 2760

Thr Cys Thr Cys Thr Gly Cys Ala Ala Gly Ala Ala Cys Ala Gly 2765 2770 2775

Cys Cys Ala Gly Cys Thr Cys Thr Thr Ala Ala Cys Thr Gly Ala 2780 2785 2790

Thr Gly Gly Cys Thr Thr Thr Thr Ala Cys Cys Thr Cys Cys Ala 2795 2800 2805

Gly Cys Cys Ala Cys Cys Thr Thr Thr Thr Cys Cys Thr Cys Ala 2810 2815 2820

Thr Thr Thr Thr Ala Ala Ala Ala Thr Thr Thr Cys Cys Thr 2825 2830 2835

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Ala Cys Ala Gly Gly Gly Thr Cys Thr Cys Ala Ala Thr Ala Cys 2855 2860 2865

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Thr Thr Gly Ala Cys Cys Cys Cys Ala Cys Thr Cys Thr Thr Cys 2885 2890 2895

Thr	Cys 2900		Thr	Gly	Cys	Cys 2905		Thr	Ala	Gly	Thr 2910	Cys	Ala	Cys
Cys	Ala 2915	_	Ala	Ala		Gly 2920		Thr	Thr	Ala	Gly 2925	Thr	Thr	Thr
Ala	Thr 2930	Ala	Ala	Gly		Ala 2935	Thr	Gly	Cys	Gly	Thr 2940	Cys	Ala	Cys
Thr	Ala 2945		Gly	Cys	Cys	Cys 2950	_	Gly	Cys	Thr	Thr 2955		Ala	Ala
Ala	Thr 2960	Ala	Ala	Ala	Cys	Thr 2965	Cys	Ala	Cys	Cys	Cys 2970	Ala	Thr	Ala
Ala	Thr 2975	Cys	Cys	Cys	Ala	Gly 2980	Cys	Ala	Cys	Thr	Gly 2985	Ala	Ala	Gly
	Ala 2990	Gly	Ala	Cys	Ala	Ala 2995	Ala	Ala	Gly	Gly	Gly 3000	Ala	Gly	Gly
Ala	Thr 3005	Cys	Gly	Ala	Thr	Gly 3010		Gly	Gly	Cys	Thr 3015	Gly	Ala	Cys
Thr	Gly 3020	Gly	Cys	Cys	Ala	Cys 3025	Ala	Ala	Gly	Cys	Cys 3030	Gly	Thr	Gly
Cys	Thr 3035	Thr	Cys	Ala	Ala	Gly 3040	Thr	Thr	Cys	Ala	Ala 3045	Thr	Gly	Ala
Ala	Gly 3050		Cys	Cys	Cys	Thr 3055	Gly	Thr	Cys	Thr	Cys 3060	Ala	Ala	Gly
Gly	Gly 3065	Ala	Ala	Thr	Ala	Ala 3070	Gly	Gly	Cys	Ala	Cys 3075	Ala	Gly	Ala
Gly	Gly 3080	Ala	Thr	Ala	Gly	Ala 3085	Gly	Cys	Cys	Ala	Thr 3090		Cys	Gly
Cys	Cys 3095	Thr	Gly	Ala	Cys	Cys 3100	Thr	Cys	Cys	Thr	Cys 3105	Cys	Thr	Cys

Thr	Gly 3110		Cys	Cys	Thr	Cys 3115		Ala	Cys	Cys	Cys 3120	Ala	Gly	Gly
Cys	Ala 3125	_	Ala	Thr	Gly	Thr 3130	Gly	Cys	Ala	Thr	Ala 3135	Cys	Ala	Cys
Ala	Cys 3140	Ala	Cys	Cys	Ala	Cys 3145	Ala	Cys	Ala	Cys	Ala 3150	Cys	Ala	Cys
Ala	Cys 3155	Ala	Cys	Ala	Cys	Ala 3160	Cys	Ala	Cys	Ala	Cys 3165	Ala	Cys	Ala
Cys	Ala 3170	Cys	Ala	Cys	Ala	Cys 3175	Ala	Gly	Ala	Gly	Ala 3180	Gly	Ala	Gly
Ala	Gly 3185	Ala	Gly	Ala	Gly	Ala 3190	Gly	Ala	Gly	Ala	Gly 3195	Ala	Gly	Ala
Gly	Ala 3200	Gly	Ala	Gly	Ala	Gly 3205	Ala	Gly	Ala	Gly	Ala 3210	Gly	Ala	Gly
Ala	Gly 3215	Ala	Gly	Ala	Gly	Ala 3220	Gly	Ala	Ala	Ala	Cys 3225	Thr	Thr	Thr
Thr	Thr 3230	Cys	Cys	Thr	Cys	Thr 3235	Thr	Thr	Thr	Thr	Thr 3240	Thr	Thr	Thr
Ala	Ala 3245	Ala	Ala	Ala	Thr	Ala 3250	Thr	Thr	Ala	Thr	Thr 3255	Thr	Ala	Thr
Thr	Thr 3260	Cys	Ala	Thr	Gly	Thr 3265	Ala	Thr	Ala	Thr	Gly 3270	Ala	Gly	Thr

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Thr Cys Ala Gly Ala Cys Ala Cys Cys Cys Cys Ala Ala Ala

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Gly	Thr 3335		Ala	Gly	Cys	Cys 3340		Cys	Cys	Ala	Thr 3345		Thr	Gly
Gly	Thr 3350		Gly	Cys	Thr	Gly 3355	_	Gly	Ala	Ala	Thr 3360		Gly	Ala
Ala	Cys 3365		Cys	Ala	Gly	Gly 3370	Ala	Cys	Cys	Thr	Cys 3375	Thr	Gly	Gly
Ala	Ala 3380		Ala	Gly	Cys	Ala 3385	Gly	Thr	Cys	Ala	Gly 3390	Thr	Gly	Cys
Thr	Cys 3395		Thr	Ala	Ala	Cys 3400	Cys	Ala	Thr	Cys	Thr 3405	Cys	Thr	Thr
Cys	Ala 3410	_	Cys	Cys	Cys	Cys 3415		Cys	Ala	Ala	Ala 3420	Gly	Ala	Ala
Ala	Cys 3425	Thr	Thr	Thr	Thr	Ala 3430	Ala	Thr	Gly	Ala	Gly 3435	Cys	Ala	Ala
Ala	Thr 3440	Ala	Ala	Thr	Thr	Gly 3445	Cys	Thr	Thr	Cys	Cys 3450	Ala	Ala	Gly
Thr	Ala 3455	Ala	Ala	Thr	Ala	Cys 3460	Thr	Ala	Cys	Thr	Ala 3465	Ala	Thr	Ala
Thr	Ala 3470	Thr	Thr	Thr	Cys	Thr 3475	Ala	Ala	Cys	Cys	Ala 3480	Thr	Ala	Cys
Thr	Ala 3485	Thr	Ala	Cys	Ala	Ala 3490	Gly	Gly	Ala	Ala	Thr 3495	Thr	Ala	Thr
Thr	Ala	Ala	Ala	Gly	Ala	Ala	Cys	Gly	Gly	Ala	Thr	Ala	Ala	Thr

Ala	Gly	Gly	Ala	Gly	Ala	Ala	Thr	Ala	Ala	Ala	Ala	Ala	Ala	Thr
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- Thr Ala Thr Ala Ala Gly Thr Cys Ala Cys Thr Thr Thr Ala Thr 3530 3535 3540
- Ala Ala Thr Gly Cys Thr Ala Thr Cys Thr Ala Ala Thr Cys Cys 3545 3550 3555
- Ala Thr Cys Thr Ala Gly Ala Ala Cys Ala Ala Ala Ala Cys 3560 3565 3570
- Ala Cys Thr Gly Thr Ala Ala Thr Ala Ala Thr Gly Cys Ala Ala 3575 3580 3585
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- Ala Gly Ala Thr Thr Ala Ala Ala Thr Ala Ala Thr Ala Ala 3605 3610 3615
- Ala Ala Thr Gly Cys Ala Gly Ala Cys Cys Ala Ala Thr Ala Ala 3620 3630
- Gly Thr Ala Ala Ala Cys Thr Thr Thr Ala Thr Ala Gly Cys Ala 3635 3640 3645
- Gly Cys Ala Cys Ala Thr Gly Gly Ala Ala Ala Thr Gly Ala Cys 3650 3660
- Gly Ala Ala Ala Thr Thr Cys Cys Thr Ala Ala Cys Ala Ala Ala 3665 3670 3675
- Ala Ala Gly Cys Thr Cys Ala Ala Gly Ala Thr Gly Gly Cys 3680 3685 3690
- Ala Gly Thr Thr Thr Ala Thr Thr Thr Ala Ala Ala Gly Thr Gly 3695 3700 3705
- Ala Ala Ala Thr Ala Cys Ala Gly Gly Ala Gly Ala Ala Ala Thr 3710 3715 3720

Ala	Ala 3725		Gly	Cys	Ala	Cys 3730		Gly	Ala	Ala	Ala 3735	Gly	Ala	Thr
Ala	Cys 3740		Cys	Ala	Ala	Ala 3745		Gly	Cys	Ala	Thr 3750	Ala	Gly	Ala
Ala	Gly 3755	Thr	Thr	Ala	Ala	Cys 3760	Ala	Thr	Ala	Gly	Gly 3765	Gly	Gly	Gly
Gly	Cys 3770	Thr	Gly	Gly	Cys	Gly 3775	Ala	Gly	Ala	Thr	Gly 3780	Gly	Cys	Thr
Cys	Thr 3785	Ala	Cys	Ala	Gly	Gly 3790		Ala	Ala	Gly	Ala 3795	Gly	Cys	Ala
Cys	Cys 3800	Cys	Gly	Ala	Cys	Thr 3805	Gly	Cys	Thr	Cys	Thr 3810	Thr	Cys	Cys
Ala	Ala 3815	Ala	Gly	Gly	Thr	Cys 3820	Cys	Thr	Gly	Ala	Gly 3825	Thr	Thr	Cys
Ala	Ala 3830	Ala	Thr	Cys	Cys	Cys 3835	Ala	Gly	Cys	Ala	Ala 3840	Cys	Cys	Ala
Cys	Ala 3845	Thr	Gly	Gly	Thr	Gly 3850	Gly	Cys	Thr	Cys	Ala 3855	Cys	Ala	Ala
Cys	Cys 3860	Ala	Thr	Cys	Cys	Gly 3865	Thr	Ala	Ala	Thr	Gly 3870	Ala	Gly	Ala
Thr	Thr 3875	Thr	Gly	Ala	Cys	Thr 3880	Cys	Cys	Cys	Thr	Cys 3885	Thr	Thr	Cys
Thr	Gly 3890	Gly	Thr	Gly	Thr	Gly 3895	Thr	Cys	Thr	Gly	Ala. 3900	Ala	Gly	Ala
Cys	Ala 3905	Gly	Cys	Thr	Ala	Cys 3910	Ala	Gly	Thr	Gly	Thr 3915	Ala	Cys	Thr
Thr	Ala 3920	Ala	Cys	Ala	Thr	Ala 3925	Thr	Ala	Ala	Thr	Ala 3930	Ala	Ala	Thr

Ala	Ala	Ala	Thr	Ala	Ala	Ala	Ala	Cys	Thr	Thr	Thr	Ala	Ala	Ala
	3935					3940					3945			

- Ala Ala Ala Ala Ala Ala Thr Thr Ala Ala Ala Gly Ala Ala 3950 3955 3960
- Gly Thr Thr Ala Ala Cys Ala Thr Ala Gly Ala Ala Gly Cys Cys 3965 3970 3975
- Cys Ala Cys Thr Cys Ala Gly Gly Ala Cys Cys Cys Cys Ala Cys 3980 3985 3990
- Thr Cys Ala Gly Thr Cys Cys Thr Ala Gly Ala Gly Thr Ala Thr 3995 4000 4005
- Gly Ala Cys Ala Thr Thr Ala Thr Thr Ala Thr Gly Gly Ala Cys 4010 4015 4020
- Ala Thr Thr Ala Ala Ala Ala Ala Gly Ala Gly Ala Ala Ala Ala 4025  $4030 \hspace{1.5cm} 4035$
- Thr Thr Cys Ala Gly Cys Ala Gly Thr Ala Gly Thr Gly 4040 4045 4050
- Thr Ala Cys Ala Cys Ala Ala Ala Thr Cys Cys Thr Thr Gly Ala 4070 4075 4080
- Gly Thr Thr Cys Ala Thr Ala Cys Cys Ala Ala Ala Thr Gly 4085 4090 4095
- Cys Cys Thr Thr Thr Ala Gly Ala Cys Cys Ala Cys Thr Thr Gly 4100 4105 4110
- Thr Gly Gly Cys Thr Cys Thr Gly Cys Ala Ala Ala Cys Cys Thr 4115 4120 4125
- Gly Thr Ala Ala Thr Cys Cys Thr Ala Gly Cys Ala Cys Thr Thr

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	4130				-	4135					4140			
Gly	Thr 4145	Gly	Ala	Ala	Ala	Ala 4150	Gly	Gly	Thr	Cys	Ala 4155	Gly	Cys	Thr
Cys	Ala 4160	Gly	Gly	Ala	Ala	Cys 4165		Thr	Thr	Gly	Gly 4170	Gly	Ala	Ala
Gly	Gly 4175	Thr	Cys	Ala	Thr	Gly 4180	Ala	Ala	Ala	Cys	Thr 4185	Cys	Thr	Thr
Gly	Cys 4190	Cys	Cys	Cys	Thr	Cys 4195	Cys	Ala	Gly	Ala	Ala 4200	Gly	Gly	Gly
Ala	Gly 4205	Ala	Gly	Gly	Cys	Thr 4210	Ala	Ala	Thr	Thr	Ala 4215	Ala	Cys	Ala
Thr	Thr 4220	Thr	Cys	Thr	Cys	Ala 4225	Gly	Ala	Cys	Cys	Ala 4230	Cys	Ala	Gly
Gly	Gly 4235	Cys	Gly	Gly	Gly	Ala 4240	Ala	Cys	Cys	Gly	Ala 4245	Cys	Cys	Thr
Gly	Cys 4250	_	Gly	Gly	Thr	Gly 4255	Gly	Gly	Gly	Ala	Cys 4260	Ala	Gly	Ala
Cys	Thr 4265	Gly	Thr	Thr	Gly	Cys 4270	Cys	Cys	Ala	Thr	Thr 4275	Thr	Cys	Cys
Ala	Gly 4280	Ala	Cys	Thr	Ala	Gly 4285	Gly	Gly	Ala	Ala	Gly 4290	Thr	Cys	Cys
Thr	Thr 4295	Gly	Thr	Cys	Ala	Cys 4300	Cys	Thr	Cys	Ala	Thr 4305	Thr	Cys	Суѕ
Cys	Thr	Ala	Ala	Ala	Gly	Ala		Cys	Ala	Ala	Thr	Cys	Ala	Ala

Thr Thr Thr Ala Ala Ala Gly Gly Gly Thr Gly Cys Ala Cys Thr

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4310 4315

Gly	Thr 4340		Cys	Cys	Gly	Cys 4345		Ala	Ala	Thr	Cys 4350		Thr	Ala
Thr	Thr 4355		Thr	Gly	Cys	Cys 4360	Thr	Ala	Gly	Thr	Thr 4365	Gly	Cys	Thr
Gly	Ala 4370		Gly	Cys	Thr	Cys 4375		Ala	Thr	Thr	Cys 4380		Gly	Cys
Cys	Cys 4385	Thr	Thr	Ala	Gly	Ala 4390	Ala	Ala	Cys	Cys	Gly 4395	Thr	Ala	Thr
Ala	Ala 4400	Ala	Ala	Ala	Cys	Thr 4405	Ala	Gly	Cys	Gly	Ala 4410	Ala	Gly	Gly
Gly	Gly 4415	Thr	Ala	Cys	-	Ala 4420	Gly	Gly	Gly	Gly	Thr 4425	Ala	Ala	Cys
Cys	Cys 4430	Cys	Cys	Thr	Cys	Thr 4435	Cys	Cys	Thr	Thr	Cys 4440	Ala	Gly	Gly
Thr	Cys 4445	Thr	Gly	Gly	Gly	Ala 4450	Cys	Ala	Ala	Thr	Cys 4455	Cys	Cys	Ala
Cys	Thr 4460	Ala	Cys	Ala	Cys	Thr 4465	Gly	Gly	Ala	Ala	Cys 4470	Ala	Ala	Thr
Ala	Ala 4475	Thr	Thr	Thr	Cys	Cys 4480	Thr	Cys	Thr	Gly	Gly 4485	Cys	Thr	Thr
Thr	Thr 4490	Thr	Gly	Cys	Ala	Thr 4495	Thr	Gly	Ala	Thr	Cys 4500	Ala	Cys	Ala
Gly	Cys 4505	Thr	Cys	Cys	Ala	Cys 4510	Thr	Thr	Cys	Gly	Thr 4515	Gly	Gly	Thr
Ala	Ala 4520	Gly	Thr	Thr	Ala	Ala 4525	Gly	Ala	Cys	Thr	Cys 4530	Cys	Cys	Thr
Gly	Gly 4535	Ala	Gly	Thr	Cys	Thr 4540	Thr	Ala	Cys	Ala	Thr 4545	Thr	Gly	Gly

Cys	Ala 4550	Ala	Ala	Thr	Gly	Cys 4555	Ala	Gly	Gly	Cys	Ala 4560	Ala	Ala	Ala
Gly	Ala 4565	Ala	Thr	Cys	Cys	Gly 4570	Ala	Ala	Ala	Cys	Thr 4575	Cys	Ala	Ala
Gly	Gly 4580	Thr	Cys	Ala	Thr	Cys 4585	Thr	Ala	Ala	Ala	Ala 4590	Cys	Thr	Ala
Cys	Ala 4595	Thr	Ala	Gly	Cys	Ala 4600	Ala	Gly	Cys	Ala	Thr 4605	Gly	Cys	Thr
Gly	Cys 4610	Thr	Ala	Gly	Cys	Cys 4615		Gly.	Gly	Gly	Cys 4620	Thr	Cys	Cys
Ala	Thr 4625	Gly	Ala	Gly	Ala	Cys 4630	Cys	Cys	Thr	Gly	Gly 4635	Gly	Gly	Gly
Ala	Gly 4640	Gly	Gly	Gly	Cys	Ala 4645	Gly	Ala	Gly	Gly	Gly 4650	Ala	Gly	Ala
Cys	Cys 4655	Gly	Thr	Thr	Cys	Ala 4660	Gly	Ala	Ala	Gly	Ala 4665	Cys	Ala	Gly
Thr	Cys 4670	Ala	Ala	Gly	Ala	Thr 4675	Gly	Thr	Thr	Gly	Cys 4680	Ala	Gly	Cys
Ala	Gly 4685	Cys	Ala	Cys	Ala	Gly 4690	Gly	Cys	Ala	Gly	Cys 4695	Cys	Thr	Gly
Gly	Cys 4700	Cys	Ala	Cys	Cys	Ala 4705	Gly	Thr	Gly	Cys	Thr 4710	Gly	Thr	Cys
Ala	Cys 4715	Cys	Ala	Gly	Ala	Cys 4720	Ala	Thr	Gly	Thr	Thr 4725	Ala	Ala	Thr
Gly	Thr 4730	Thr	Gly	Gly	Ala	Ala 4735	Thr	Ala	Ala	Ala	Gly 4740	Cys	Cys	Thr
Cys	Ala 4745	Ala	Thr	Cys	Ala	Thr 4750	Gly	Ala	Cys	Thr	Cys 4755	Thr	Cys	Cys

Cys Ala	Gly	Thr	Thr	Thr	Thr	Ala	Thr	Ala	Ala	Thr	Thr	Gly	Gly
4760					4765					4770			

- Ala Ala Ala Thr Ala Ala Gly Ala Ala Ala Gly Gly Ala Ala Ala 4775 4780 4785
- Gly Ala Cys Thr Ala Thr Ala Gly Gly Ala Ala Cys Ala Ala Cys 4790 4795 4800
- Thr Gly Thr Gly Thr Thr Cys Ala Gly Ala Ala Cys Ala Cys Thr 4805 4810 4815
- Ala Thr Thr Thr Ala Thr Ala Ala Thr Ala Gly Cys Ala Ala Ala 4820 4830
- Gly Ala Thr Cys Thr Cys Ala Gly Ala Gly Thr Ala Ala Cys Cys 4835 4840 4845
- Cys Ala Ala Cys Thr Thr Cys Thr Ala Gly Ala Cys Ala Thr 4850 4855 4860
- Thr Gly Ala Thr Thr Gly Gly Gly Ala Ala Gly Ala Thr Cys 4865 4870 4875
- Thr Cys Thr Thr Gly Gly Cys Ala Gly Cys Thr Thr Ala Thr Thr 4880 4885 4890
- Thr Thr Gly Ala Ala Ala Ala Cys Thr Thr Thr Ala Cys Ala Ala 4895 4900 4905
- Thr Gly Thr Thr Ala Ala Ala Thr Ala Thr Gly Thr Ala Ala Ala 4910 4915 4920
- Ala Ala Cys Ala Ala Gly Gly Ala Cys Ala Gly Thr Thr Thr 4925 4930 4935
- Gly Thr Thr Thr Thr Thr Gly Thr Thr Thr Gly Thr Thr 4940 4945 4950
- Thr Thr Gly Thr Thr Thr Gly Thr Thr Thr Ala Gly Gly

Gly	Ala 4970	Thr	Ala	Thr	Ala	Thr 4975	Ala	Thr	Thr	Cys	Ala 4980	Thr	Ala	Thr
Ala	Thr 4985	_	Thr	Ala	Thr	Ala 4990		Gly	Ala	Ala	Thr 4995	Gly	Ala	Ala
Ala	Ala 5000	_	Cys	Cys	Ala	Ala 5005		Cys	Thr	Thr	Ala 5010	Ala	Ala	Ala
Thr	Thr 5015	_	Cys	Cys	Cys	Ala 5020		Thr	Ala	Thr	Gly 5025	Cys	Thr	Thr
Thr	Ala 5030	Ala	Ala	Gly	Gly	Cys 5035	Thr	Thr	Thr	Cys	Thr 5040	Gly	Ala	Cys
Ala	Ala 5045	Thr	Ala	Ala	Cys	Ala 5050	Gly	Ala	Ala	Ala	Gly 5055	Ala	Gly	Ala
Ala	Ala 5060	Thr	Ala	Gly	Ala	Gly 5065	Ala	Ala	Thr	Cys	Cys 5070	Ala	Thr	Ala
Ala	Ala 5075	Ala	Ala	Cys	Thr	Ala 5080	Gly	Thr	Thr	Cys	Thr 5085	Gly	Ala	Ala
Ala	Cys 5090		Ala	Thr	Cys	Ala 5095	Ala	Thr	Ala	Gly	Gly 5100	Cys	Thr	Thr
Gly	F 1 0 F										Gly 5115		Thr	Gly
Cys	Cys 5120	Ala	Gly	Gly	Ala	Gly 5125	Ala	Gly	Cys	Thr	Gly 5130	Ala	Ala	Thr
Cys	Thr 5135	Gly	Ala	Ala	Cys	Ala 5140	Cys	Ala	Gly	Gly	Gly 5145	Ala	Ala	Cys
Cys	Cys 5150	Cys	Ala	Cys	Cys	Cys 5155	Ala	Gly	Cys	Ala	Cys 5160	Cys	Cys	Cys

Ala	Ala 5165	Ala	Thr	Thr	Thr	Gly 5170	Gly	Ala	Thr	Thr	Ala 5175	Thr	Thr	Gly
Thr	Thr 5180	Thr	Thr	Ala	Thr	Thr 5185	Thr	Thr	Ala		Cys 5190	Thr	Thr	Thr
Cys	Cys 5195	Cys	Cys	Thr		Cys 5200	Cys	Cys	Cys	Cys	Ala 5205	Ala	Gly	Ala
Cys	Ala 5210	_	Gly	Gly	Thr	Thr 5215		Cys	Thr	Cys	Thr 5220		Cys	Gly
Thr	Gly 5225	Gly	Thr	Cys	Cys	Thr 5230	Gly	Gly	Cys	Thr	Gly 5235	Thr	Cys	Cys
Thr	Gly 5240	Gly	Ala	Ala	Cys	Thr 5245	Cys	Gly	Gly	Ala	Gly 5250	Ala	Thr	Cys
Cys	Thr 5255	Cys	Thr	Gly		Cys 5260	Thr	Cys	Thr	Cys	Thr 5265	Gly	Cys	Cys
Thr	Cys 5270	Thr	Cys	Thr	Gly	Cys 5275	Cys	Thr	Cys	Thr	Cys 5280	Thr	Cys	Thr
Cys	Thr 5285	Cys	Thr	Cys	Thr	Gly 5290		Cys	Thr	Cys	Thr 5295	Cys	Thr	Cys
Thr	Gly 5300	Cys	Cys	Thr	Cys	Thr 5305	Cys	Thr	Cys	Thr	Cys 5310	Thr	Cys	Thr
Cys	Thr 5315	Cys	Thr	Cys	Thr	Cys 5320	Thr	Gly	Cys	Cys	Thr 5325	Cys	Thr	Cys
Thr	Cys 5330	Thr	Cys	Thr	Cys	Thr 5335	Cys	Thr	Cys	Thr	Gly 5340	Cys	Cys	Cys
Cys	Thr 5345	Cys	Gly	Cys	Thr	Gly 5350	Cys	Cys	Thr	Cys	Thr 5355	Cys	Thr	Cys
Thr	Gly 5360	Cys	Cys	Thr	Cys	Thr 5365	Cys	Thr	Cys	Thr	Gly 5370	Cys	Cys	Cys

Cys	Thr 5375	Cys	Thr	Cys	Thr	Gly 5380		Cys	Cys	Cys	Thr 5385	Cys	Thr	Cys
Thr	Gly 5390	Cys	Cys	Cys	_	Thr 5395	Cys	Thr	Cys	Thr	Cys 5400		Thr	Cys
Cys	Cys 5405	_	Thr	Cys	Thr	Cys 5410	Thr	Gly	Cys	Cys	Thr 5415	Cys	Thr	Cys
Thr	Cys 5420	Thr	Cys	Thr	Gly	Cys 5425	Cys	Cys	Cys	Thr	Cys 5430	Thr	Cys	Thr
Gly	Cys 5435	_	Thr	Cys	Thr	Cys 5440	Thr	Gly	Cys	Cys	Thr 5445	Cys	Thr	Gly
Cys	Cys 5450	Thr	Cys	Cys	Thr	Gly 5455	Ala	Gly	Thr	Gly	Cys 5460	Thr	Gly	Gly
Gly	Ala 5465	Thr	Thr	Thr	Ala	Ala 5470	Ala	Gly	Gly	Cys	Ala 5475	Thr	Cys	Ala
Gly	Cys 5480	Cys	Ala	Thr	Cys	Ala 5485	Cys	Thr	Thr	Cys	Cys 5490	Ala	Gly	Cys
Thr	Thr 5495	Cys	Cys	Thr	Thr	Thr 5500	Ala	Thr	Cys	Ala	Thr 5505	Thr	Thr	Thr
Ala	Ala 5510	Ala	Ala	Ala	Gly	Ala 5515	Ala	Thr	Thr	Thr	Cys 5520	Cys	Thr	Ala
Thr	Gly 5525	Thr	Gly	Ala		Thr 5530	Ala	Cys	Thr	Gly	Thr 5535	Ala	Thr	Thr
Thr	Ala 5540	Ala	Ala	Thr	Cys	Ala 5545	Cys	Cys	Ala	Cys	Ala 5550	Cys	Gly	Gly
Cys	Cys 5555	Ala	Ala	Thr	Ala	Cys 5560	Thr	Cys	Cys	Cys	Cys 5565	Cys	Cys	Cys
Ala	Ala 5570	Cys	Thr	Cys	Cys	Thr 5575	Cys	Cys	Cys	Ala	Ala 5580	Ala	Thr	Cys

Cys Cys Cys Thr Cys Thr Ala Cys Cys Cys Ala Cys Thr Cys Ala 5585 5590 5595

Ala Ala Thr Thr Cys Thr Thr Ala Thr Cys Thr Thr Gly Thr Ala 5600 5605 5610

Thr Thr Cys Thr Thr Thr Ala Thr Cys Ala Thr Thr Ala Thr Thr 5615 5620 5625

Ala Thr Ala Cys Ala Thr Ala Thr Gly Thr Gly Thr Ala Thr Ala 5630 5640

Thr Ala Thr Gly Thr Gly Thr Gly Thr Gly Thr Ala Thr 5645 5650 5655

Ala Thr Ala Thr Ala Thr Ala Thr Ala Thr Ala Cys Thr Ala Thr 5660 5665 5670

Ala Thr Ala Cys Thr Gly Cys Thr Ala Ala Thr Gly Ala Gly Thr 5675 5680 5685

Ala Ala Cys Ala Thr Thr Thr Ala Gly Thr Gly Thr Thr Ala Thr 5690 5695 5700

Thr Cys Ala Thr Thr Gly Thr Thr Gly Cys Ala Thr Gly Thr Thr 5705 5710 5715

Thr Thr Cys Ala Ala Thr Gly Thr Gly Cys Thr Thr Thr Cys Cys 5720 5730

Ala Gly Gly Ala Gly Gly Cys Thr Gly Gly Gly Gly Gly Ala 5735 5740 5745

Thr Gly Gly Cys Thr Cys Ala Gly Thr Gly Gly Gly Cys Ala Ala 5750 5760

Ala Ala Thr Thr Cys Thr Ala Gly Cys Thr Gly Cys Ala Cys Ala 5765 5770 5775

Ala Gly Cys Cys Thr Ala Ala Gly Gly Ala Cys Cys Ala Gly Gly

5780 5785 5790

Gly Thr Thr Cys Ala Gly Ala Thr Cys Cys Cys Cys Ala Ala Thr 5795 5800 5805

Ala Thr Ala Ala Ala Gly Gly Cys Thr Gly Gly Cys Thr Gly Gly 5810 5820

Ala Cys Ala Thr Gly Gly Thr Gly Gly Cys Thr Thr Gly Cys Cys 5825 5830 5835

Thr Ala Thr Gly Ala Thr Ala Cys Thr Ala Gly Cys Ala Thr Gly 5840 5845 5850

Cys Thr Thr Gly Cys Thr Gly Gly Ala Ala Gly Cys Ala Ala Ala 5855 5860 5865

Gly Ala Cys Ala Gly Gly Gly Ala Ala Thr Cys Cys Cys Thr Gly 5870 5880

Gly Ala Gly Ala Cys Thr Thr Ala Gly Ala Ala Thr Cys Thr Cys 5885 5890 5895

Ala Gly Ala Ala Gly Thr Gly Ala Thr Cys Thr Gly Gly Cys 5900 5905 5910

Thr Gly Gly Ala Cys Ala Gly Ala Cys Thr Ala Gly Cys Thr Gly 5915 5920 5925

Ala Ala Cys Thr Gly Gly Cys Cys Ala Gly Cys Thr Cys Thr Gly 5930 5940

Gly Gly Thr Thr Cys Ala Thr Cys Ala Ala Gly Ala Ala Cys 5945 5950 5955

Cys Cys Thr Ala Cys Cys Thr Cys Cys Ala Thr Ala Ala Cys Ala 5960 5965 5970

Thr Ala Ala Gly Thr Gly Thr Gly Ala Thr Gly Gly Ala Gly 5975 5980 5985

- Ala Ala Gly Gly Cys Ala Cys Cys Thr Ala Ala Thr Gly Thr 5990 5995 6000
- Cys Ala Ala Cys Cys Thr Cys Ala Ala Ala Cys Cys Cys Thr 6005 6010 6015
- Ala Cys Cys Thr Gly Cys Ala Thr Gly Thr Gly Cys Ala Cys Ala 6020 6025 6030
- Cys Ala Cys Ala Thr Ala Cys Ala Thr Cys Cys Ala Cys 6035 6040 6045
- Cys Ala Cys Ala Cys Ala Cys Ala Cys Ala Cys Ala Cys 6050 6060
- Ala Cys Ala Cy
- Cys Cys Ala 6080 6085 6090
- Cys Ala Cys Ala Ala Ala Thr Ala Ala Thr Ala Ala Gly Thr 6095 6100 6105
- Ala Ala Ala Thr Ala Ala Thr Ala Ala Ala Ala Thr Ala Thr 6110 6115 6120
- Thr Thr Ala Gly Cys Thr Cys Thr Cys Cys Ala Gly Ala Cys Cys 6125 6130 6135
- Ala Ala Ala Thr Cys Thr Thr Gly Gly Thr Gly Ala Ala Ala Cys 6140 6145 6150
- Cys Cys Ala Thr Gly Cys Ala Thr Thr Thr Gly Cys Ala Thr Thr 6155 6160 6165
- Thr Gly Thr Gly Thr Gly Thr Cys Cys Thr Ala Cys Ala 6170 6175 6180
- Ala Ala Cys Ala Cys Thr Gly Ala Ala Gly Gly Thr Thr Ala Ala 6185 6190 6195

- Gly Ala Ala Gly Cys Ala Thr Gly Cys Thr Cys Cys Thr Thr Ala 6200 6210
- Gly Thr Ala Ala Thr Thr Thr Thr Ala Thr Ala Gly Cys Ala Gly 6215 6220 6225
- Thr Thr Thr Gly Cys Gly Thr Thr Thr Cys Cys Ala Gly Ala Thr 6230 6235 6240
- Thr Gly Ala Ala Ala Ala Cys Ala Gly Ala Thr Thr Cys Thr Ala 6245 6250 6255
- Thr Ala Gly Gly Cys Thr Ala Cys Ala Cys Ala Gly Thr Gly Cys 6260 6265 6270
- Thr Ala Ala Ala Thr Gly Gly Ala Thr Thr Ala Thr Gly Cys Thr 6275 6280 6285
- Cys Ala Gly Ala Thr Ala Cys Ala Gly Ala Thr Thr Gly Ala Ala 6290 6295 6300
- Ala Ala Gly Gly Ala Thr Ala Cys Ala Gly Ala Thr Thr Gly Ala 6305 6310 6315
- Ala Ala Ala Gly Gly Gly Thr Cys Gly Gly Gly Gly Thr Cys Thr 6320 6330
- Gly Gly Cys Cys Ala Gly Gly Ala Thr Gly Ala Cys Gly Gly 6335 6340 6345
- Gly Cys Cys Ala Ala Cys Thr Ala Thr Cys Thr Thr Thr Gly Cys 6350 6360
- Cys Cys Gly Gly Gly Cys Thr Thr Gly Thr Cys Cys Thr Thr Cys 6365 6370 6375
- Ala Gly Gly Gly Ala Ala Gly Gly Gly Thr Thr Ala Cys Ala Gly 6380 6385 6390
- Gly Ala Thr Thr Cys Ala Cys Cys Ala Cys Thr Gly Gly Gly 6395 6400 6405

Thr Gly Thr Gly Gly Cys Cys Thr Ala Thr Cys Thr Gly Cys Thr 6410 6420

Gly Thr Thr Ala Gly Gly Ala Cys Cys Thr Gly Ala Ala Thr Thr 6425 6430 6435

Gly Cys. Cys Thr Gly Gly Ala Gly Thr Gly Thr Thr Thr Cys Thr 6440 6445 6450

Ala Gly Thr Thr Cys Cys Cys Ala Cys Thr Ala Gly Thr Thr Gly 6455 6460 6465

Thr Thr Gly Ala Ala Cys Thr Thr Thr Ala Cys Cys Thr Thr Gly 6470 6480

Ala Ala Cys Cys Thr Cys Thr Gly Cys Thr Cys Cys Ala Gly 6485 6490 6495

<210> 9

<211> 361

<212> PRT

<213> Homo sapiens

<400> 9

Ala Ala Thr Thr Thr Cys Thr Ala Cys Ala Gly Gly Cys Thr Ala 1 5 10 15

Thr Ala Gly Ala Gly Thr Gly Cys Ala Gly Thr Thr Gly Gly Cys 20 25 30

Thr Ala Ala Ala Gly Cys Ala Ala Ala Ala Cys Cys Thr Ala Gly Gly 35 40 45

Thr Ala Cys Ala Gly Thr Cys Ala Gly Gly Gly Ala Cys Thr Ala Cys 50 55 60

Ala Cys Ala Ala Thr Thr Cys Cys Ala Gly Thr Thr Cys Gly Cys Thr 65 70 75 80

Gly Thr Gly Gly Gly Thr Thr Gly Gly Gly Ala Ala Gly Gly Gly Ala 85 90 95

Thr Gly Gly Gly Thr Gly Gly Gly Cys Cys Ala Gly Thr Gly Cys Thr 100 105 110

Gly Gly Cys Ala Ala Gly Cys Cys Thr Thr Gly Ala Thr Cys Thr Thr 115 120 125

Thr Gly Cys Cys Cys Gly Gly Gly Cys Thr Thr Gly Thr Cys Cys Thr 130 135 140

Thr Cys Thr Gly Gly Gly Gly Ala Gly Ala Ala Thr Thr Ala Cys Cys 145 150 155 160

Thr Gly Cys Thr Thr Cys Thr Gly Cys Thr Gly Gly Ala Cys Thr Gly 165 170 175

Ala Gly Gly Gly Thr Gly Cys Cys Cys Thr Cys Ala Thr Cys Thr Cys 180 185 190

Thr Gly Gly Cys Thr Ala Gly Ala Gly Cys Cys Cys Gly Thr Gly Cys 195 200 205

Thr Gly Cys Cys Ala Thr Gly Gly Ala Ala Gly Ala Cys Thr Cys Thr 210 215 220

Thr Thr Cys Cys Gly Gly Thr Gly Cys Cys Cys Ala Cys Thr Ala Ala 225 230 235 240

Ala Thr Cys Cys Thr Thr Gly Ala Thr Gly Thr Thr Cys Ala Cys Cys 245 250 255

Gly Ala Gly Ala Gly Thr Cys Ala Thr Cys Cys Gly Gly Ala Cys 275 280 285

Cys Cys Thr Cys Cys Cys Ala Thr Cys Cys Cys Thr Gly Gly Ala Gly 290 295 300

Thr Cys Thr Cys Thr Gly Cys Ala Gly Ala Gly Gly Thr Thr Ala Thr

310

315

320

Thr Thr Gly Ala Cys Cys Ala Gly Cys Ala Gly Cys Thr Cys 325 330 335

Cys Cys Cys Gly Gly Cys Cys Thr Cys Cys Gly Thr Cys Cys Ala 340 345 350

Cys Gly Thr Cys Cys Thr Cys Ala Gly 355 360

<210> 10

<211> 279

<212> PRT

<213> Homo sapiens

<400> 10

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Gly Gly Gly Gly Cys Gly Gly Gly Cys Ala Gly Gly Thr Gly Gly
20 25 30

Gly Gly Cys Gly Gly Cys Cys Ala Cys Cys Ala Gly Gly Thr Gly 35 40 . 45

Ala Gly Ala Gly Ala Ala Ala Cys Ala Gly Cys Thr Cys Ala Thr Gly 50 55 60

Ala Gly Ala Gly Cys Gly Ala Cys Cys Thr Cys Thr Gly Cys Cys Thr 65 70 75 80

Cys Thr Gly Cys Cys Thr Gly Gly Cys Thr Gly Ala Ala Cys Ala Ala 85 90 95

Ala Thr Gly Cys Cys Thr Cys Thr Gly Cys Cys Gly Cys Ala Cys Thr 100 105 110

Cys Ala Cys Ala Ala Thr Ala Ala Thr Thr Gly Ala Gly Thr Gly Gly 115 120 125

Thr Gly Ala Gly Cys Ala Cys Ala Gly Cys Thr Thr Gly Gly Ala Ala

60

130 135

Ala Thr Cys Thr Cys Thr Gly Thr Gly Gly Thr Thr Gly Thr Thr 145 150 155 160

Gly Gly Ala Gly Gly Thr Cys Thr Thr Gly Thr Thr Ala Thr Cys Ala 165 170 175

Thr Gly Gly Ala Ala Thr Thr Gly Ala Ala Cys Ala Gly Thr Ala 180 185 190

Gly Cys Thr Thr Gly Thr Gly Thr Gly Cys Thr Gly Cys Ala 195 200 205

Gly Cys Thr Thr Thr Thr Ala Cys Ala Ala Cys Thr Ala Ala Ala 210 215 220

Gly Thr Thr Ala Ala Thr Thr Gly Gly Ala Gly Gly Cys Cys Ala Gly 225 235 240

Thr Thr Gly Cys Thr Cys Thr Gly Gly Gly Ala Ala Gly Cys Gly Gly 245 250 255

Ala Thr Gly Gly Gly Gly Thr Gly Gly Gly Ala Gly Gly Ala Cys Ala 260 265 270

Thr Gly Gly Cys Cys Ala Gly 275

<210> 11

<211> 784

<212> DNA

<213> Mus musculus

<220>

<221> misc feature

<222> (1)..(784)

<223> SHIP cDNA

<400> 11

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tgctggagtg tccgtcctgg gagtggctgc tgacccagtc caggagaccc atgcctgcca 120

tggtccctgg gtggaaccat ggcaacatca cccgctccaa ggcagaggag ctactttcca 180. gagccggcaa ggacgggagc ttccttgtgc gtgccagcga gtccatcccc cgggcctacg 240 300 cactetgcqt qctqttccqq aattqtqttt acacttacag gattctgccc aatgaggacg ataaattcac tgttcaggca tccgaaggtg tccccatgag gttcttcacg aagctggacc 360 420 agctcatcga cttttacaag aaggaaaaca tggggctggt gacccacctg cagtaccccg 480 tgcccctgqa ggaggaggat gctattgatg aggctgagga ggacactgta gaaagtgtca tqtcaccacc tqaqctgcct cccagaaaca ttcctatgtc tgccgggccc agcgaggcca 540 600 aggacettee tettgeaaca gagaaceee gageeeetga ggteaeeegg etgagtetet 660 ccgagacact gtttcagcgt ctacagagca tggataccag tgggcttccc gaggagcacc 720 tgaaagccat ccaggattat ctgagcactc agctcctcct ggattccgac tttttgaaga 780 cgggctccag caacctccct cacctgaaga agctgatgtc actgctctgc aaggagctcc 784 atgg

<210> 12

<211> 225

<212> PRT

<213> Mus musculus

<220>

<221> MISC FEATURE

<222> (1)..(225)

<223> SHIP amino acid sequence

<400> 12

Met Pro Ala Met Val Pro Gly Trp Asn His Gly Asn Ile Thr Arg Ser 1 5 10 15

Lys Ala Glu Glu Leu Leu Ser Arg Ala Gly Lys Asp Gly Ser Phe Leu 20 25 30

Val Arg Ala Ser Glu Ser Ile Pro Arg Ala Tyr Ala Leu Cys Val Leu 35 40 45

Phe Arg Asn Cys Val Tyr Thr Tyr Arg Ile Leu Pro Asn Glu Asp Asp 50 55 60

Lys Phe Thr Val Gln Ala Ser Glu Gly Val Pro Met Arg Phe Phe Thr

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65 70 75 80

Lys Leu Asp Gln Leu Ile Asp Phe Tyr Lys Lys Glu Asn Met Gly Leu 85 90 95

Val Thr His Leu Gln Tyr Pro Val Pro Leu Glu Glu Glu Asp Ala Ile 100 105 110

Asp Glu Ala Glu Glu Asp Thr Val Glu Ser Val Met Ser Pro Pro Glu
115 120 125

Leu Pro Pro Arg Asn Ile Pro Met Ser Ala Gly Pro Ser Glu Ala Lys 130 135 140

Leu Ser Leu Ser Glu Thr Leu Phe Gln Arg Leu Gln Ser Met Asp Thr 165 170 175

Ser Gly Leu Pro Glu Glu His Leu Lys Ala Ile Gln Asp Tyr Leu Ser 180 185 190

Thr Gln Leu Leu Leu Asp Ser Asp Phe Leu Lys Thr Gly Ser Ser Asn 195 200 205

Leu Pro His Leu Lys Lys Leu Met Ser Leu Leu Cys Lys Glu Leu His 210 215 220

Gly 225

<210> 13

<211> 2946 <212> DNA

<213> Mus musculus

<220>

<221> misc feature

<222> (1)..(2946)

<223> s-SHIP cDNA (partial)

<400> 13

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ctgccatccc	tggagtctct	gcagaggttg	tttgaccaac	agctctcccc	aggccttcgc	120
ccacgacctc	aggtgcccgg	agaggccagt	cccatcacca	tggttgccaa	actcagccaa	180
ttgacaagtc	tgctgtcttc	cattgaagat	aaggtcaagt	ccttgctgca	cgagggctca	240
gaatctacca	acaggcgttc	ccttatccct	ccggtcacct	ttgaggtgaa	gtcagagtcc	300
ctgggcattc	ctcagaaaat	gcatctcaaa	gtggacgttg	agtctgggaa	actgatcgtt	360
aagaagtcca	aggatggttc	tgaggacaag	ttctacagcc	acaaaaaaat	cctgcagctc	420
attaagtccc	agaagtttct	aaacaagttg	gtgattttgg	tggagacgga	gaaggagaaa	480
atcctgagga	aggaatatgt	ttttgctgac	tctaagaaaa	gagaaggctt	ctgtcaactc	540
ctgcagcaga	tgaagaacaa	gcattcggag	cagccagagc	ctgacatgat	caccatcttc	600
attggcactt	ggaacatggg	taatgcaccc	cctcccaaga	agatcacgtc	ctggtttctc	660
tccaaggggc	agggaaagac	acgggacgac	tctgctgact	acatccccca	tgacatctat	720
gtgattggca	cccaggagga	tccccttgga	gagaaggagt	ggctggagct	actcaggcac	.780
tccctgcaag	aagtcaccag	catgacattt	aaaacagttg	ccatccacac	cctctggaac	840
attcgcatag	tggtgcttgc	caagccagag	catgagaatc	ggatcagcca	tatctgcact	900
gacaacgtga	agacaggcat	cgccaacacc	ctgggaaaca	agggagcagt	gggagtgtcc	960
ttcatgttca	atggaacctc	cttggggttc	gtcaacagcc	acttgacttc	tggaagcgaa	1020
aaaaagctca	ggagaaatca	aaactatatg	aacatcctgc	ggttcctggc	cctgggagac	1080
aagaagctaa	gcccatttaa	catcacccac	cgcttcaccc	acctcttctg	gcttggggat	1140
ctcaactacc	gcgtggagct	gcccacttgg	gaggcagagg	ccatcatcca	gaagatcaag	1200
caacagcagt	attcagacct	tctggcccac	gaccaactgc	tcctggagag	gaaggaccag	1260
aaggtcttcc	tgcactttga	ggaggaagag	atcaccttcg	ccccaccta	tcgatttgaa	1320
agactgaccc	gggacaagta	tgcatacacg	aagcagaaag	caacagggat	gaagtacaac	1380
ttgccgtcct	ggtgcgaccg	agtcctctgg	aagtcttacc	cgctggtgca	tgtggtctgt	1440
cagtcctatg	gcagtaccag	tgacatcatg	acgagtgacc	acagccctgt	ctttgccacg	1500
tttgaagcgg	gagtcacatc	tcaattcgtc	tccaagaatg	gtcctggcac	tgtagatagc	1560
caagggcaga	tcgagtttct	tgcatgctac	gccacactga	agaccaagtc	ccagactaag	1620
ttctacttgg	agttccactc	aagctgctta	gagagttttg	tcaagagtca	ggaaggagag	1680

aatgaagagg	gaagtgaagg	agagctggtg	gtacggtttg	gagagactct	tcccaagcta	1740
aagcccatta	tctctgaccc	cgagtactta	ctggaccagc	atatcctgat	cagcattaaa	1800
tcctctgaca	gtgacgagtc	ctatggtgaa	ggctgcattg	cccttcgctt	ggagaccaca	1860
gaggctcagc	atcctatcta	cacgcctctc	acccaccatg	gggagatgac	tggccacttc	1920
aggggagaga	ttaagctgca	gacctcccag	ggcaagatga	gggagaagct	ctatgacttt	1980
gtgaagacag	agcgggatga	atccagtgga	atgaaatgct	tgaagaacct	caccagccat	2040
gaccctatga	ggcaatggga	gccttctggc	agggtccctg	catgtggtgt	ctccagcctc	2100
aatgagatga	tcaatccaaa	ctacattggt	atggggcctt	ttggacagcc	cctgcatggg	2160
aaatcaaccc	tgtccccaga	tcagcaactc	acagcttgga	gttatgacca	gctacccaaa	2220
gactcctccc	tggggcctgg	gagggggag	ggtcctccaa	cccctccctc	ccaaccacct	2280
ctgtcgccaa	agaagttttc	atcttccaca	gccaaccgag	gtccctgccc	cagggtgcaa	2340
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gtgcccagga	aagagcagga	gtctcccaag	atgctgcgga	aggagccccc	gccctgtcca	2520
gacccaggaa	tctcatcacc	cagcatcgtg	ctccccaaag	cccaagaggt	ggagagtgtc	2580
aaggggacaa	gcaaacaggc	ccctgtgcct	gtccttggcc	ccacaccccg	gatccgctcc	2640
tttacctgtt	cttcttctgc	tgagggcaga	atgaccagtg	gggacaagag	ccaagggaag	2700
cccaaggcct	cagccagttc	ccaagcccca	gtgccagtca	agaggcctgt	caagccttcc	2760
aggtcagaaa	tgagccagca	gacaacaccc	atcccagctc	cacggccacc	cctgccagtc	2820
aagagtcctg	ctgtcctgca	gctgcaacat	tccaaaggca	gagactaccg	tgacaacaca	2880
gaactccccc	accatggcaa	gcaccgccaa	gaggagggc	tgcttggcag	gactgccatg	2940
cagtga						2946

<210> 14

<220>

<sup>&</sup>lt;211> 928

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Mus musculus

<sup>&</sup>lt;221> MISC\_FEATURE

<sup>·&</sup>lt;222> (1)..(928)

<223> s-SHIP amino acid sequence (partial)

<400> 14

Met Val Ala Lys Leu Ser Gln Leu Thr Ser Leu Leu Ser Ser Ile Glu 1 5 10 15

Asp Lys Val Lys Ser Leu Leu His Glu Gly Ser Glu Ser Thr Asn Arg 20 25 30

Arg Ser Leu Ile Pro Pro Val Thr Phe Glu Val Lys Ser Glu Ser Leu 35 40 45

Gly Ile Pro Gln Lys Met His Leu Lys Val Asp Val Glu Ser Gly Lys 50 55 60

Leu Ile Val Lys Lys Ser Lys Asp Gly Ser Glu Asp Lys Phe Tyr Ser 65 70 75 80

His Lys Lys Ile Leu Gln Leu Ile Lys Ser Gln Lys Phe Leu Asn Lys 85 90 95

Leu Val Ile Leu Val Glu Thr Glu Lys Glu Lys Ile Leu Arg Lys Glu 100 105 110

Tyr Val Phe Ala Asp Ser Lys Lys Arg Glu Gly Phe Cys Gln Leu Leu 115 120 125

Gln Gln Met Lys Asn Lys His Ser Glu Gln Pro Glu Pro Asp Met Ile 130 135 140

Thr Ile Phe Ile Gly Thr Trp Asn Met Gly Asn Ala Pro Pro Pro Lys 145 150 155 160

Lys Ile Thr Ser Trp Phe Leu Ser Lys Gly Gln Gly Lys Thr Arg Asp 165 170 175

Asp Ser Ala Asp Tyr Ile Pro His Asp Ile Tyr Val Ile Gly Thr Gln
180 185 190

Glu Asp Pro Leu Gly Glu Lys Glu Trp Leu Glu Leu Leu Arg His Ser 195 200 205 Leu Gln Glu Val Thr Ser Met Thr Phe Lys Thr Val Ala Ile His Thr 210 215 220

Leu Trp Asn Ile Arg Ile Val Val Leu Ala Lys Pro Glu His Glu Asn 225 230 235 240

Arg Ile Ser His Ile Cys Thr Asp Asn Val Lys Thr Gly Ile Ala Asn 245 250 255

Thr Leu Gly Asn Lys Gly Ala Val Gly Val Ser Phe Met Phe Asn Gly 260 265 270

Thr Ser Leu Gly Phe Val Asn Ser His Leu Thr Ser Gly Ser Glu Lys 275 280 285

Lys Leu Arg Arg Asn Gln Asn Tyr Met Asn Ile Leu Arg Phe Leu Ala 290 295 300

Leu Gly Asp Lys Lys Leu Ser Pro Phe Asn Ile Thr His Arg Phe Thr 305 310 315 320

His Leu Phe Trp Leu Gly Asp Leu Asn Tyr Arg Val Glu Leu Pro Thr 325 330 335

Trp Glu Ala Glu Ala Ile Ile Gln Lys Ile Lys Gln Gln Gln Tyr Ser 340 345 350

Asp Leu Leu Ala His Asp Gln Leu Leu Leu Glu Arg Lys Asp Gln Lys 355 360 365

Val Phe Leu His Phe Glu Glu Glu Glu Ile Thr Phe Ala Pro Thr Tyr 370 375 380

Arg Phe Glu Arg Leu Thr Arg Asp Lys Tyr Ala Tyr Thr Lys Gln Lys 385 390 395 400

Ala Thr Gly Met Lys Tyr Asn Leu Pro Ser Trp Cys Asp Arg Val Leu 405 410 415

Trp Lys Ser Tyr Pro Leu Val His Val Val Cys Gln Ser Tyr Gly Ser 420 425 430

Thr Ser Asp Ile Met Thr Ser Asp His Ser Pro Val Phe Ala Thr Phe 435 440 445

Glu Ala Gly Val Thr Ser Gln Phe Val Ser Lys Asn Gly Pro Gly Thr 450 455 460

Val Asp Ser Gln Gly Gln Ile Glu Phe Leu Ala Cys Tyr Ala Thr Leu 465 470 475 480

Lys Thr Lys Ser Gln Thr Lys Phe Tyr Leu Glu Phe His Ser Ser Cys 485 490 495

Leu Glu Ser Phe Val Lys Ser Gln Glu Gly Glu Asn Glu Gly Ser 500 505 510

Glu Gly Glu Leu Val Val Arg Phe Gly Glu Thr Leu Pro Lys Leu Lys 515 520 525

Pro Ile Ile Ser Asp Pro Glu Tyr Leu Leu Asp Gln His Ile Leu Ile 530 535 540

Ser Ile Lys Ser Ser Asp Ser Asp Glu Ser Tyr Gly Glu Gly Cys Ile 545 550 555 560

Ala Leu Arg Leu Glu Thr Thr Glu Ala Gln His Pro Ile Tyr Thr Pro 565 570 575

Leu Thr His His Gly Glu Met Thr Gly His Phe Arg Gly Glu Ile Lys 580 585 590

Leu Gln Thr Ser Gln Gly Lys Met Arg Glu Lys Leu Tyr Asp Phe Val 595 600 605

Lys Thr Glu Arg Asp Glu Ser Ser Gly Met Lys Cys Leu Lys Asn Leu 610 620

Thr Ser His Asp Pro Met Arg Gln Trp Glu Pro Ser Gly Arg Val Pro 625 630 635 640

Ala Cys Gly Val Ser Ser Leu Asn Glu Met Ile Asn Pro Asn Tyr Ile

Gly Met Gly Pro Phe Gly Gln Pro Leu His Gly Lys Ser Thr Leu Ser -665 Pro Asp Gln Gln Leu Thr Ala Trp Ser Tyr Asp Gln Leu Pro Lys Asp Ser Ser Leu Gly Pro Gly Arg Gly Glu Gly Pro Pro Thr Pro Pro Ser Gln Pro Pro Leu Ser Pro Lys Lys Phe Ser Ser Ser Thr Ala Asn Arg Gly Pro Cys Pro Arg Val Gln Glu Ala Arg Pro Gly Asp Leu Gly Lys Val Glu Ala Leu Leu Gln Glu Asp Leu Leu Thr Lys Pro Glu Met Phe Glu Asn Pro Leu Tyr Gly Ser Val Ser Ser Phe Pro Lys Leu Val Pro Arg Lys Glu Gln Glu Ser Pro Lys Met Leu Arg Lys Glu Pro Pro Pro Cys Pro Asp Pro Gly Ile Ser Ser Pro Ser Ile Val Leu Pro Lys Ala Gln Glu Val Glu Ser Val Lys Gly Thr Ser Lys Gln Ala Pro Val Pro Val Leu Gly Pro Thr Pro Arg Ile Arg Ser Phe Thr Cys Ser Ser Ser Ala Glu Gly Arg Met Thr Ser Gly Asp Lys Ser Gln Gly Lys Pro Lys Ala Ser Ala Ser Ser Gln Ala Pro Val Pro Val Lys Arg Pro Val 

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Lys Pro Ser Arg Ser Glu Met Ser Gln Gln Thr Thr Pro Ile Pro Ala 865 870 875 880 Pro Arg Pro Pro Leu Pro Val Lys Ser Pro Ala Val Leu Gln Leu Gln 885 890 His Ser Lys Gly Arg Asp Tyr Arg Asp Asn Thr Glu Leu Pro His His 905 Gly Lys His Arg Gln Glu Glu Gly Leu Leu Gly Arg Thr Ala Met Gln 920 925 <210> 15 <211> 178 <212> DNA <213> Mus musculus <220> <221> misc feature <222> (1)...(178)<223> first exon of s-SHIP and adjacent intronic sequence <400> 15 attgcctgga gtgtttctag ttcccactag ttgttgaact ttaccttgaa cctctgctcc 60 cagggaagtc atcaggactc tgccatccct ggagtctctg cagaggttgt ttgaccaaca 120 gctctcccca ggccttcgcc cacgacctca ggtaaggggt ttggatttgg aaagatgc 178 <210> 16 <211> 188 <212> DNA <213> Homo sapiens <220> <221> misc feature <222> (1)..(188) <223> first exon of SIP-110 and flanking intronic sequences <400> 16 catggaagac tctttccggt gcccactaat ccttgatgtt caccttgtcc cctgcccca 60 gagaagtcat ccggaccctc ccatccctgg agtctctgca gaggttattt gaccagcagc 120 tctccccggg cctccgtcca cgtcctcagg taaagggtct tggggttgaa aaggtgagat 180 taataccc 188

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